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USSR Report

AGRICULTURE

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10 June 1983

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MAJOR CROP PROGRESS AND WEATHER REPORTING

INSTRUCTIONS FOR WATER CONSUMPTION IN BELORUSSIAN SSR ISSUED

Minsk SEL'SKAYA GAZETA in Russian 5 Apr 83 p 3

Article by N. Polivko, chief of the republic's Belvodekspluatatsiya Association of the Ministry of Land Reclamation and Water Resources for the Belorussian SSR: "The Operational Situation Dictates: Conserve the Moisture!"

Text Special weather conditions have developed within the republic which are promoting a raised level of moisture evaporation from the soil's surface.

The ground water level for a number of land reclamation systems in Maloritskiy, Drogichinskiy, Lyakhovichskiy, Braginskiy, Soligorskiy, Lyubanskiy and Slonimskiy Rayons has dropped to a depth of up to 1 meter or more. This is producing a deficit of moisture during the initial period of growth for the agricultural crops.

Today the service for the operation of land reclamation systems of the BSSR Minvodkhoz /Ministry of Land Reclamation and Water Resources/ and the agricultural organizations in the various areas must evaluate the situation thoroughly and carry out a number of measures aimed at preventing the occurrence of unfavorable conditions that could arise at the end of April or in early May of this year.

In the interest of retaining the spring moisture supplies and making maximum use of local runoff, daily control must be established over the condition of the reclaimed lands and the ground water level must not be allowed to fall any further. The water gates of water regulating installations on canals and river-water intakes must be closed immediately in the interest of ensuring that they are filled with water, mainly along the upper reaches of water basins, on haying lands and pastures and on lands which are not guaranteed a water supply.

In the event of an absence of atmospheric precipitation during the subsequent periods of spring, a portion of the runoff from some of the better flows of water should ideally be diverted into canals containing only small amounts of water, with use being made for this purpose of bulkhead installations, mobile pumping stations and portable pipelines of spraying units, all of which are available at a majority of the kolkhozes, goskhozes and MUOS. Ideally, cascade water control should also be organized for the canals using temporary

water retention bulkheads made out of tarpaulin or polyethylene plastic mounted on a sectional-dismountable framework. This will make it possible to distribute the water supplies in a more uniform manner.

Measures must also be undertaken to ensure that the ponds and reservoirs are filled completely. Each reservoir and pond must be operated on the basis of a dispatcher schedule prepared in advance by the operating organizations. The irrigated lands must not be overlooked. So as not to miss the best periods for the first watering, the following operations should be carried out prior to 15 April: the irrigation equipment should be prepared, the operation of the water sources should be guaranteed and observation of the moisture content of the soil should be organized. Importance is being attached at the present time to the laying out and assembly of the pipelines. Such work is being carried out in particular by the land reclamation specialists and farmers in Pinskiy, Dyatlovskiy, Oshmyanskiy, Soligorskiy, Bobruyskiy and other rayons.

Here they have taken into account the fact that precipitation during the spring period can introduce considerable corrections to the moisture regime for reclaimed lands. Thus they are devoting special attention to the status of the soil's water regime. When raising the levels to 0.5-0.6 meters from the surface, a partial discharge of water from the canals must be carried out to establish a depth for them on shallow peat bog and disconnected soils of 0.6-0.8 meters and on deep layers of soil -- 0.8-0.9 meters.

During the pre-sowing and sowing periods, the discharge of water from low areas and dew ponds should be carried out using furrows and craters. Considerable importance is being attached at the present time to distributing agricultural crop sowings on drained lands in keeping with their water regime requirements.

The time is at hand for commencing the operation of canal cleaning equipment in the southern regions of the republic. Indeed the fields are free of crops and there are no obstacles to the highly productive use of this equipment.

The carrying out of all of these measures will make it possible to ensure the required drainage norm for the reclaimed lands and to lower to a minimum the possible unfavorable phenomena associated with the prevailing weather conditions.

7026
CSO: 1824/318

MAJOR CROP PROGRESS AND WEATHER REPORTING

SIBERIAN WINTER FARMING CONDITIONS DESCRIBED

Moscow IZVESTIYA in Russian 13 Jan 83 p 1

[Article by A. Illarionov, O. Pavlov and A. Shcherbakov: "On Winter Siberian Fields"]

[Excerpts] Siberian fields are truly vast--last year, grain and legume crops alone occupied 14 million hectares. And these fields are distinguished by the great diversity of natural and climatic conditions.

Despite the different conditions in which Siberians engage in field-crop cultivation and the general unconditional constituents of a crop and high farming standards prevail. They include determined struggle for moisture, good-quality seeds of the intensive sorts, able use of equipment and skilled cadres.

The harvests of the last 2 years in the south of West Siberia did not do well because of an acute shortage of moisture. This is why in preparing for the spring of the third year of the five-year plan, the farmers of Novosibirsk Oblast first of all take into consideration this factor in their plans.

Last year's fall raised the hopes of grain growers. The rains were lasting and copious. One would think the soil had enough. But such an impression turned out to be deceptive: the autumn rains saturated only the plowed layer; the moisture failed to penetrate below this because of the onset of frosts and snow.

The proper conclusion was made from this--retention of snow remains one of the bases of crops. And the winter so far has been favorable to this. Snow cover on the fields is one and a half times deeper than the many-year average. All that remains is to save the snow and to make sure that the wind does not blow it away.

But it is not just a matter of more than a million cultivated hectares but rather how to cultivate them so that the result is more ponderable. The scientists of the Siberian Department of the All-Union Academy of Agricultural Sciences insistently advise shifting from loosening to tamping down of snow on the windward slopes (they take up to 25 percent of the area).

The methods developed by the scientists are being perfected on kolkhozes and sovkhozes. In the largest grain rayon of the oblast--Krasnozerskiy--there are being used snow collectors with a tamping device of simple and accessible design. This problem is finding a solution in other rayons as well.

January, February and even part of March are still winter in Siberia, and field workers must do everything possible to make broader use of snow-retention methods.

Even today agronomists are dreaming up techniques for retention of thawed water in the fields. The harvest to a large extent will depend on this.

Seeds constitute another harvest element. By the first of January, the oblast's farms had brought up to sowing conditions 96 percent of the sowing material--the figure is impressive. Still one would wish for something better. First-class seeds constitute slightly more than one-quarter of their total amount.

Things are more difficult with respect to perennial-grass seeds. A little more than one third of the amount required for sowing has been saved up. Two dry summers have contributed to this. Good grass as we know means more milk and meat. Ways must be found for providing farms with grass seeds.

This year, winter in the south of West Siberia has been unusually warm. As never before, winter rye under the snow cover is doing well; this rye provides stable yields and has been planted significantly more than planned. In accordance with the plan, rural workers are bringing humus to the fields. We must assume that there are still ahead real Siberian frosts, but spring is no longer that far away. The oblast's grain growers approach it with the confidence of obtaining a big harvest.

The machine operators of Krasnoyarsk Kray together with their colleagues from Gorkiy Oblast are the initiators of the All-Russian Competition for Exemplary Preparation of Equipment for Field Work in 1983. Sowing and soil-cultivating machines were planned by them to be overhauled by 1 January, tractors, grain combines and motor vehicles by 15 April and fodder-procurement equipment by the first of May.

Unfortunately, the kray faces a difficult situation in regard to seeds. And although it is better than was the case last year, today an indicator like the availability of only 71.5 percent of certified seeds is not, of course, satisfactory. Big differences are noticeable in the availability of certified seeds in different regions of the kray. There are to be found not only farms but entire rayons, such as Shushenskiy, Yermakovskiy, Minusinskiy, where all the seeds down to the last one are up to sowing standards, moreover, essentially 1st and 2nd classes; there are also others where they do not even reach 40 percent. These are primarily eastern rayons. The harvesting was conducted there under difficult conditions, with endless rains, and dragged out indefinitely. Many agronomists and heads of farms were unable to deal with the developed situation and collect and save up good seeds. Now these farms, one might say are both with seeds and without seeds. There is enough grain saved

to fully meet the need, but its germinating capability is such that exchange is required.

And of course, this work must be done now more determinedly. The possibility exists of bringing more seeds up to the 1st and 2nd class levels of the sowing standard, but this has been proceeding slowly so far.

At the present time, there exists in the kray a system of farming that provides for the introduction of model technologies of cultivation of agricultural crops under different soil and climatic regions. A kray and rayon commissions are being created for carrying out this work. Scientists have come to the aid of specialists. But even the wisest system cannot be realized without the eternal three key factors--availability of reliable equipment, certified seeds and trained machine-operator cadres. And here, despite some successes, there is still work for the local soviets and the new agroindustrial associations to do.

To what has been said above, it would appear that the following should be added. It is true that in many localities of Siberia there is now a lot of snow in the fields. This is a good sign. But it is very important, as they say, not to lose sight of it and to be more determined in seeing that the ground gets as much productive moisture as possible. And here we think that the experience of the Novosibirsk farms will be of great value.

Experienced managers are now especially concerned about seeds. Their quality could be better not only in Krasnoyarsk Kray but in a number of other places as well. One is also concerned that while enough wheat seeds have been saved up (exception--Kemerovo Oblast), there is not enough sowing material for several other crops: first of all, legumes, buckwheat (with the exception of Altay Kray and Buryat ASSR), sunflower and perennial grasses. The new organs of management--the agroindustrial associations--must apply energetic efforts to make sure that the spring fields have good-quality grain.

The level of preparedness of tractors in East Siberia as a whole is above that of last year, while in West Siberia, as last year, the figure at this time is 83 percent.

Unfortunately, the rate of repair of sowers, plows and tractor trailers in a number of oblasts and autonomous republic is lower than last year. This is an alarm signal for the managers of the State Committee for Selkhoztekhnika and the engineering services of kolkhozes and sovkhozes. Taking into consideration that in the east optimum periods for conducting field work of decisive importance, preparations for this must be untiring.

The country is justified in counting at this time on a significant contribution by the farmers of this tremendous region in the realization of the decisions of the May and November (1982) plenums of the CPSU Central Committee.

7697

CSO: 1824/259

MAJOR CROP PROGRESS AND WEATHER FORECASTING

BRIEFS

TUVA USES RESISTANT SEEDS--Kyzyl, 1 Feb--Tuva's largest farms--'Krasnyy Pakhar', 'Pobeda' and 'Aldan-Maadyr' sovkhozes--have completed preparing seeds much earlier than last year. The farmers had stockpiled only first- and second-class seeds. For the autonomous republic as a whole, the share of grain-crop seeds of varieties that are resistant to lodging, diseases and pests has grown significantly. Mironovskaya Yarovaya wheat, Donetskii-8 and Rassvet barley, Sel'ma and Belozernyy oats and Irtysh millet, which will take up considerable areas, have done well under local conditions. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 2 Feb 83 p 1] 7697

SNOW BANKS--Novosibirsk, 16 (TASS)--Snow plowing has been started on the 3rd million of hectares by the oblast's grain growers. This year for the first time compacted snow banks have been formed. More than 500 mechanized detachments are taking part in the work. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 12 Feb 83 p 1] 7697

SNOW RETENTION--Omsk, 17 Feb--The oblast's farmers are carrying out snow retention on the 4th million of hectares. This work is being repeated in the steppe rayons--Russko-Polyanskiy, Novovarshavskiy, Odesskiy and Tavricheskiy. As in former years, at most of the farms agronomists have applied a differentiated approach to winter agrotechnology. In the first winter months, compacters worked primarily. Now, when the fields are covered with a compact heavy layer of snow, all technical resources have been put to work. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 18 Feb 83 p 1] 7697

COMPLEX DETACHMENTS EFFECTIVE--Novosibirsk, 23 Feb--the oblast's farmers, relying on the aid of Selkhoztekhnika units are doing much at the present time to boost soil fertility. Good results have been obtained there where permanent complex detachments have been created in bringing humus; high-efficiency equipment is used and measures of moral and material incentives have been applied. In the course of a month, 884,000 tons of organic fertilizer were brought to the fields; this is considerably more than for the same period of last year. In Ordynskiy, Ust'-Tarksiy, Krasnozerskiy and Kyshtovskiy rayons, bringing of local fertilizers increased 1.5-2.0 fold compared to last year's indicators. In Baganskiy Rayon, 2,500 tons of organic fertilizer are being brought each day. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 24 Feb 83 p 2] 7697

EXTRA-WIDE SNOW PLOWING--Uglovskoye (Altay Kray), 23 Feb--an unusual method of snow retention is being used by the machine operators by Kalininskiy Sovkhoz of Uglovskiy Rayon in Altay Kray. They attached 9 snow plows to a single thick steel cable. Two K-700 tractors pull this unit, the operating width of which is 100 meters. With straight-through working of the fields, machine operators in one round cut 40-hectare snow banks--almost tenfold more than usual. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 26 Feb 83 p 1] 7697

MILD WINTER ON YENISEY--The winter has been unusually mild on the Yenisey. Frost remain for a day or two as if to test the resistance of Siberians, and then they ease off. True, we are ready for any tricks, for we are accustomed to having fierce cold weather in the spring. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 3 Mar 83 p 1] 7697

SNOWBANKING IN ALTAY KRAY--Barnaul--Altay machine operators have cut up the 2nd million of hectares. Each day snow-retention work is done on 35,000 hectares. The use of different innovations helps keep the work going at a high tempo. On the farms, for example, there are employed units made from ordinary logs with couplings from discarded Kirovets-tractor tires. Such a device does a good job of tamping down the snow. [Text] [Moscow TRUD in Russian 18 Jan 83 p 1] 7697

AERIAL BRIDGE OVER YENISEY--Yeniseyk, Krasnodar Kray--Siberians have not been spoiled for a long time with a winter of such surprises. In the central area of Krasnoyarsk Kray, after fierce frosts, thermometers began to persistently show plus temperatures, with copious rains coming down. But while most city dwellers saw in this phenomenon of nature only an amusing incident, the population of remote districts of the kray found such a "surprise" most undesirable. The fact is that the winter roads stretching along the ice-bound Yenisey and its tributaries are used for delivering winter freight, mail and even passengers to remote forest settlements. Today, it is not only impossible to ride on the river's thin ice, it is even dangerous to walk. This is why many populated places find themselves cut off from Bolshaya Zemlya. Such a situation exists, for example, in Severo-Yeniseysk Rayon. Assistance has come from aviation. Mail, foodstuffs and freight for industrial enterprises are being transported on An-2 aircraft and helicopters. Passenger planes rise into the sky more often than usual. [Text] [Moscow TRUD in Russian 8 Feb 83 p 4] 7697

STARLINGS STOPPING IN SIBERIA--The inhabitants of Novokuznetsk are hearing the spring trilling of starlings at the height of the Siberian winter. Settling on a tree, a flock sounded resounding trills. How have warm-loving migratory birds stopped off in Siberia? "This rather rare case can be explained by the unusually warm winter," T. Gagina, specialist geologist, doctor of biological sciences and professor at Kemerovo State University, related to the Tass correspondent. "In the coldest month, January, the air temperature in Kuzbas, for example, frequently rises above zero. There have even been rains. This has evidently been responsible for the premature return of our feathered friends from the warm regions." [Text] [Moscow TRUD in Russian 12 Feb 83 p 4] 7697

UNUSUAL ICE PHENOMENON--The inhabitants of Tyumen and nearby villages observed a phenomenon unusual for the beginning of October. The trees in the forest and gardens became covered with a thick crust of ice. The icing did not start at once. On Friday, it began raining in the morning; this was then followed by wet snow. By evening the air temperature had dropped sharply. As a result, trees and wires acquired an icy coating. Some of them, unable to bear the weight of the ice, broke. There were cases of broken lines. Meteorologists explain the icing by a cyclone that had shifted from the Lower Volga in the direction of Tyumen and Kurgan. In 3 days, more than 18 millimeters of precipitation fell in the form of rain and wet snow, which is double the month's norm for October. An operational group has been created under Tyumen Gorispol-kom for doing away with the consequences of the ice blockade. Cross-country vehicles and special detachments for eliminating the damage have been sent by the city to kolkhozes and sovkhozes. [Text] [Moscow VOZDUSHNYY TRANSPORT in Russian 5 Oct 82 p 4] 7697

AMUR AREA GETS FERTILIZER--Khabarovsk--More than 2.5 million tons of organic fertilizers have been transported to fields of the Amur region for the coming crop. This is almost one-third more than last year at this time. Moreover, 30,000 hectares of acidic soil have been limed, adding to the plowing area of Far-Eastern farms. The delivery of compost to the fields was speeded up by use of tractor-trailer trains. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 11 Jan 83 p 1] 7697

LARGER COMPOST DELIVERIES--Kyzyl--The farmers of Barun-Khemchikskiy Rayon of Tuva ASSR live in concern for the future harvest. Strong frosts have not interfered with machine operators from bringing to the fields one and a half times more compost and mineral mixtures. This success has been achieved thanks to precision work organization of special detachments provided with high-efficiency equipment. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 14 Jan 83 p 1] 7697

CERTIFIED SEEDS AVAILABLE--Khabarovsk--Sovkhozes and kolkhozes of the Amur region have been fully provided with certified seeds. The kray's farmers have developed a program for renewal of fodder fields. Rape is being widely used in crop rotation. Its sowings occupy in excess of 15 percent of the areas devoted to fodder crops. Planting of sunflower is being significantly expanded, for it has done well in the Far East. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 1 Feb 83 p 1] 7697

CSO: 1824/259

LIVESTOCK FEED PROCUREMENT

NEW METHOD FOR PROCESSING OF STRAW ADVANCED

Moscow SEL'SKAYA ZHIZN' in Russian 7 Apr 83 p 2

Article: "The Method Is Being Employed Extensively, But..."

Text The use of ferment for the purpose of raising the nutritional value of coarse feeds is deserving of attention and recently this method has been employed more extensively at kolkhozes and sovkhozes in Moscow, Kurgan and Chelyabinsk Oblasts, Stavropol Kray and in the Mary, Udmurt, Mordovian and Bashkir Autonomous Republics.

The RSFSR Ministry of Agriculture, jointly with scientific workers at TSKhA Timiryazev Agricultural Academy and VNIBI and based upon experience accumulated at the Kuybyshevo Sovkhoz in Moscow Oblast and on other farms, prepared and issued on a mass scale in 1982 the recommendations entitled "The Industrial Production of Carbohydrate-Protein Feed From Ferment-Yeast Treated Straw."

At the same time, the extensive dissemination of this technology for preparing straw and other coarse straw feeds for feeding purposes is being held up at the present time owing to the existence of serious disagreements among the scientific institutes in evaluating its effectiveness and also by an acute deficit of ferment and food yeasts.

G. Ogryzkin
RSFSR Deputy Minister of Agriculture

* * *

The ferment-yeast method for treating straw, developed at VNIBI Vsesoyuznyy nauchno-issledovatel'skiy Institut Biotekhnika; All-Union Scientific-Research Institute Biotekhnika/ jointly with TSKhA workers, has been subjected to extensive testing by scientific-research institutes and the practice of kolkhozes and sovkhozes.

Studies carried out at VIZh All-Union Scientific Research Institute of Livestock Breeding, VNIIFBp for Agricultural Livestock and VIK All-Union Scientific Research Institute of Fodder/ do not confirm any substantial effect realized from this technology with regard to raising the nutritional value of straw. During tests carried out using young bulls at the Stavropol Scientific

Research Institute of Agriculture, straw prepared using the fermentation method displayed no advantage over scalded straw in terms of its productive action.

In connection with the conflicting results, joint studies of the ferment-yeast straw treatment method involving the participation of VIZh, VNIIIFBP, TSKhA and VNII Biotekhnika are presently being carried out at the Aleksandrovo Training-Experimental Farm in Moscow Oblast.

Based upon the results obtained, a decision will be handed down concerning the feasibility of the extensive use of this straw treatment method and on increasing the production of ferment preparations.

L. Kuznetsov
USSR Deputy Minister of Agriculture

Commentary by the Animal Husbandry Department of the Editorial Board

Such conflicting and mutually exclusive replies were received by the Editorial Board in response to the article published on the new method of ferment-yeast treatment of straw and other coarse-stalk feeds (SEL 'SKAYA ZHIZN', 11 February).

The newspaper has repeatedly published materials on this subject and on each occasion has received similar conflicting responses from the USSR and RSFSR Ministries of Agriculture.

First of all, it is surprising to learn that the USSR Ministry of Agriculture has drawn a conclusion regarding its unsuitability even prior to the completion of all-round studies of the new method. Indeed, not one of the institutes mentioned in the reply has carried out such tests. In the majority of instances, only individual and fragmentary tests were carried out on feed that had been treated with ferment, but in accordance with a technology which differed greatly from that proposed by TSKhA and VNII Biotekhnika scientists. Thus VIZh studied a feed mixture the recipe for which differed in terms of seven out of eight components and the tests themselves were carried out with crude violations of the methodology. At the Stavropol NIISKh /Scientific Research Institute of Agriculture/, completely different ferment were used for the testing. At no time were balanced tests carried out on the animals, tests which could have provided reliable information concerning the digestibility of the feed. It was for precisely this reason that, following a protest by the authors of the method, a decision was made to carry out committee tests at the Aleksandrovskiy Sovkhoz.

At the present time, these tests, which are expected to last for 120 days, are half completed. The initial results obtained are already making it possible to make a judgement concerning the truly high effectiveness of the biological treatment of straw. During the first month of the period under review, the animals which were supplied with treated feed furnished 12-16 percent more meat and 6-8 percent more milk than cows in the two control groups and the average daily weight increase for heifers increased by 17 percent compared to control.

It is interesting to cite the opinions registered by workers at the Aleksandrovskiy Sovkhoz regarding the new method.

A.I. Chanova, a milkmaid: "The cows in the control group are consuming all feed being made available to them and hence higher milk yields are being obtained. And at times the straw that does not contain ferments has to be thrown away." I.A. Andreyev, a chief veterinary doctor: "At the present time, we are kings, thanks to our feed. The fermented straw has been of great help. The productivity of the herd has improved, as has also the health of the animals."

At the Troitsk Farm the treated straw is being fed not only to an experimental group but to all of the animals -- more than 450 cows. The results are as follows: their blood structure has normalized, acidosis has been eliminated, the daily milk yields have been raised by 2 kilograms compared to past years, the fat content of the milk has increased and the occurrence of dyspepsia in newly born calves has ceased.

We could probably stop at this point were it not for one circumstance. Some VIZh workers who are responsible for carrying out the testing are employing methods which are far from scientific and are striving, as much as possible, to cast the new technology in the worst light. They have actually removed other individuals from participating in the testing work and an agreed upon testing method has been violated in a crude manner. Thus, instead of highly productive cows of second and third lactations, first heifers have mainly been made available for the study and for fattening -- heifers of mating age instead of young bulls. The structure of the groups changed repeatedly during the course of the testing and the animals were transferred from one place to another; on one occasion a highly productive cow was transferred to a control group and its place was taken up by a low milk yield cow.

The feed studied -- in this instance straw -- must constitute 40-50 percent of the ration and it actually constitutes only 17-30 percent. And indeed it is quite understandable: the lower the proportion of this feed the less its effect on milk yields and weight gains. Yes and this ration is constantly being violated. Thus haylage was fed to the animals for an extended period of time instead of silage. The accounting of the feed is also poorly organized.

There were also frequent instances of the fermented feed being removed from the feeding troughs and replaced by silage. It bears mentioning that a zootechnical analysis of the feeds studied was not carried out on a timely basis and the nutritional value of the feed when composing a ration was based upon average tabular data.

And one most important factor: decisive balanced testing of the livestock, which makes it possible to determine the feed value of the treated straw, was not carried out. Meanwhile the VIZh workers intend to abbreviate the work and complete the studies 1 month ahead of schedule.

The ferment-yeast treatment of straw makes it possible to convert it not only into edible but into highly nutritious feed. In the process, the digestibility of the cellulose increases to 79 or more percent, the protein content increases to 8-10 percent and the nutritional value of a kilogram of feed -- to 0.7-0.8 feed units. This means that by employing this new straw treatment technology on an extensive scale, the country's farms will be able to obtain, according to

the most prudent estimates, 20-30 million additional tons of feed units -- as much as is being produced by all farms in the Ukraine.

A situation must never be tolerated in which a matter of great state importance is allowed to suffer for the sake of narrow departmental interests.

7026
CSO: 1824/343

LIVESTOCK

DIRECTIONS FOR INCREASING MEAT AND MILK PRODUCTION OUTLINED

Moscow PLANOVYE KHOZYAYSTVO in Russian No 4, Apr 83 pp 37-46

[Article by V. Kozhevnikov, main administration deputy chief, USSR Ministry of Agriculture: "The Most Important Directions for Increasing Meat and Milk Resources"]

[Text] Consistently implementing its agrarian policy, the Communist Party places first priority upon ensuring, as rapidly as possible, the stable supply of all types of foodstuffs to the population, and substantially improving the Soviet people's nutritional patterns through the consumption of the most valuable products -- meat and milk.

At the November (1982) CPSU Central Committee Plenum it was noted that paramount attention should be given to the realization of the nation's Food Program. This requires the combined efforts of agriculture and its service sectors in transport, industry, and trade, as well as the subordination of all their activities to the common final goal -- the production of high quality food products and their delivery to the consumer. In a physiological sense our nation solved the food problem a long time ago. Data on the average per capita food consumption show that the needs of the human organism for energy content are completely met. With respect to the caloric content of the daily ration we not only exceed the average world level, but also the group of the most developed nations. According to FAO data, in 1980 the average per capita food supply (in kilocalories) was: for the world -- 2,590, Western Europe -- 3,378, and the USSR -- 3,443.

However, society's requirements are always growing. The increase in income and the stable price level for the basic types of food cause the population's demand for animal products to increase about 1.5 fold faster than money incomes. Per capita income will grow another 16-18 percent during the 11th Five-Year Plan. Consequently, there will be increased demand for animal products. Therefore, top priority should be given to the problem of qualitatively improving nutritional patterns, and achieving balance in nutrients, especially protein. Animal protein is the most complete with respect to its amino acid content. The human organism assimilates 75-80 percent of milk protein, and 70-75 percent of milk protein.

The party and government give constant attention to the development of animal husbandry. The nation's kolkhozes and sovkhozes have huge potentials for its development. The sector's supplies of materials and equipment have improved, a lot of work has been done to specialize and concentrate farms, and new

industrial technologies are being successfully introduced, creating the conditions for the complete mechanization of animal husbandry production processes. The implementation of the program for the transformation of animal husbandry to an industrial basis was made possible through the development of sectors servicing agricultural production (machine building, construction, chemicals, mixed feeds, transport, and processing).

Land improvement and the application of chemicals is under way on a large scale in the nation. A set of measures has been developed and is being implemented to socially restructure the countryside, strengthen the economics of agricultural production, and improve the material interest of agricultural workers for attaining high efficiency in the sector.

The animal husbandry farms at many kolkhozes and sovkhozes are equipped with highly productive breeding stock, the genetic potentials of which ensure the production of more than 3,000 kilograms of milk annually from each cow, and daily weight gains of 800-1,000 grams during the fattening of large horned cattle. This is shown not only by the results at progressive farms, but also those at entire rayons, oblasts, and republics. Animal husbandry workers in the Estonian SSR, in many rayons of the Moldavian SSR, Leningrad, Moscow, and Kiev Oblasts, in a number of oblasts in the RSFSR, the Ukraine, and the Karelian ASSR obtain an average of more than 3,000 kg per cow annually. However, the potentials of highly productive breeds of animals at the disposal of animal husbandry operations at kolkhozes and sovkhozes are still far from completely used. In order for this high potential productivity to become actual products it is essential to considerably improve the supply of feeds and their balance of basic elements. During the current five-year plan extensive measures are being conducted to strengthen feed production's material-technical base.

It is intended to carry out a lot of work to improve feed quality, and above all to reduce losses in nutrients during preparation and storage. A basic role here is given to the extensive introduction of progressive technologies for harvesting feed crops, the construction of high quality feed storage facilities, and the extensive use of chemical preservatives and plastic films for protecting coarse and succulent feeds.

Workers in agriculture and the appropriate sectors -- chemicals, microbiological, meat and dairy -- have turned special attention to solving the feed protein problem.

In order to increase protein production it is planned to substantially change the cropping structure of areas devoted to feed crops. There will be a sizable increase in the proportion of leguminous grasses (alfalfa, clover, and others), and an increase in the production of grain and fodder from pulse crops (peas, soybeans, rape, and fodder beans). The feed grains crop structure should also produce more corn, barley, and oats.

Concurrently, measures are under way to develop enterprises in the mixed feed and microbiological industries, and to considerably increase the production of starter mixed feeds for young animals.

All this creates a reliable basis for expanding upon the responsible tasks put forward by the USSR Food Program. So, during the 12th Five-Year Plan the average annual production of meat should reach 20-25 million tons, a 5.2-5.7 million ton growth compared to the 10th Five-Year Plan.

Large problems in dairy operations also face solutions. Average annual milk production during the 12th Five-Year Plan will amount to 104-106 million tons, compared to 92.6 million in the 10th plan.

The thorough intensification of the sector is the development direction intended to successfully carry out these tasks. This includes the transition to intensive livestock feeding operations, increases in their weight and more meat per head.

Simultaneously, there are the tasks of considerably increasing milk yield per cow, poultry productivity, the wool shear per sheep, improving quality indicators and strengthening the economy of the sector. Such an approach to the sector's development permits the most rational use of animals, feed, fixed capital, other material resources, and the labor of animal husbandry workers.

Increasing meat production is one of the most responsible and complex tasks of the nation's agriculture.

Between 1965 and 1981 it grew 1.5 fold, beef production increased from 3.9 to 6.6 million tons, or 70 percent, while the total herd of long horned cattle increased from 93.4 million head to 115.9 million, or 24 percent.

In the past 15 years per capita beef consumption increased from 12.9 to 25.7 kg. At present beef accounts for 44 percent of total meat production, pork -- 34 percent, and poultry meat -- 15 percent. This pattern in meat production will be basically retained to 1990.

The largest amount, about 50 percent, of the beef is produced in the RSFSR, of which over 70 percent comes from the Volga, Central, West Siberian, Urals, and North Caucasus Economic Regions. However, the level attained far from completely meets the population's growing demand for this product. According to scientifically based nutritional norms average annual per capita beef consumption should be 34-35 kg. The Food Program for the period up to 1990 envisages obtaining 9.5 million tons (slaughter weight) of beef, an increase of more than 40 percent over 10 years.

The realization of this program calls for the more effective use of reserves for increasing beef production based on the wide scale intensive raising and feeding of dairy and multipurpose livestock calves in excess of the number needed for replacement (cverkhremontniy), feeding culled out adult cattle, and on the development of specialized beef cattle raising. Special attention is given to increasing the live weight and improving the condition of animals sold for meat, and simultaneously reducing their raising and feeding time. This reduces feed outlays per unit of growth and improves cattle raising labor productivity and economic efficiency. There are a number of other important measures, including the protection of the herd and improvements in its reproduction, the reduction of meat losses during procurement, transport and processing. Such measures will be implemented in all regions.

The most important prerequisites for the further intensification of beef production are specialization, concentration, and the introduction of industrial processes.

It is intended to specialize cattle raising in two directions: on the basis of creating new and further developing existing large state, cooperative, and inter-farm enterprises for breeding, raising and feeding cattle; and intrafarm specialization at kolkhozes and sovkhozes, where specialized farms are to raise and feed cattle.

The analysis of work at farms for feeding large horned cattle shows that the highest technical-economic indicators are attained where the complete production cycle -- from breeding calves to the completion of young animal feeding -- is conducted.

At these enterprises individual elements of the technology are organizationally and technically completely connected into a single production process. The continuous, flow line nature of production is clearly reflected, and highly skilled cadre of operators, operation and enterprise managers have been formed. The nation now has more than 30 complexes, calculated to feed 10,000 young animals annually, operating in such a manner.

The average weight of calves arriving at such enterprises is 47-67 kg, and at the end of feeding, at age 14 months, male calves weigh 426 - 487 kg. Average daily weight gaine throughout the entire production cycle fluctuates from 920 to 1,027 grams.

The Mir feeding complex in the Belorussian SSR is an example of a highly efficient industrial enterprise for beef production. In 1981 it raised and fed 10,800 head of cattle, having a total live weight of 4,989 tons. Average live weight per head delivered to the state was 463 kg, and average daily weight gain during feeding was 1,200 grams. Each quintal of weight gain required 5.4 quintals of fodder units and 2.4 labor hours. Production costs per quintal of weight gain were 99.5 rubles and production profitability was 35 percent.

In recent years in addition to the construction and operation of large scale beef production complexes in covered facilities, the cost of which is quite high, cattle feeding at a different type of lot has become widespread. The construction of these lots makes it possible to expand the scale and simplify the technology of feeding, mechanize labor and ensure high labor productivity.

A large number of feed lots are operating in our country. The largest ones (20,000 head each) were built in Rostov Oblast. In recent years each has averaged 5,500 tons of live weight gain annually (the daily average is 831 grams), and expenditures are 9.6 fodder units per kg of weight gain and 1.7 labor hours per quintal.

In addition to such areas, in many regions large feed lots have been created. They are used all year and are designed for 1,500 - 3,000 cattle each.

The analysis of operations at various types of feed lots shows that the construction of lots for final feeding reduces the use fo construction materials, fuel, and energy, and permits comprehensive mechanization.

However, unfavorable weather conditions in the fall and winter considerably reduce weight gain and simultaneously increase feed consumption per unit of output. The results show that growth during the fall-winter is 13-38 percent lower than during spring-summer and feed consumption per unit of output is 19-68 percent higher, and in some months this range is even greater.

Production experience and scientific research show that feeding technology and cattle maintenance systems, and their volume-layout design decisions should be thoroughly differentiated by natural and economic zone and region to ensure minimal losses during unfavorable seasons.

Now, when first priority has been given to creating a large industry for beef production, it is essential to substantially strengthen the material-technical base of feeding operations, organize new specialized enterprises for raising and feeding animals, and reconstruct existing facilities and farms.

In regions with unfavorable climate in the fall-winter, the feeding of cattle in lightweight covered facilities with controlled microclimates will become widespread. This permits the effective use of feed through reductions in energy expenditures to keep the animals warm, and it improves their living conditions. Output losses are simultaneously minimized. In southern zones the use of feed lots is accompanied by expanded scales of young animal feeding at comparatively low capital investments.

The basic elements of progressive technology for feeding cattle are:

The loose stabling of animals in groups not exceeding 30-40 on slotted concrete floors in the main facilities and feed lots. During the final feeding period cattle can be kept in stalls;

Coarse and succulent fodder predominates, while the optimal use of concentrates is around 27-30 percent. The daily weight gain during final feeding is 800 - 1,200 grams. In sugar beet and potato growing regions maximum use is made of food industry wastes (pulp and malt residues) as the basic feed ration.

It is intended to expand the use of biologically active substances (growth stimulants, carbamide, and others containing nitrogen). This permits increased intensification of large horned cattle feeding and improves feed utilization.

There are still considerable reserves for increasing beef production through reductions in barrenness in among bearing age cows, the reduction of deaths and the distress slaughter of animals.

World experience is evidence that it is impossible to optimally solve the two problems -- high volumes of milk and high quality beef production -- through using one breed of cattle.

The nation has planned to implement large organizational and economic measures for the accelerated development of specialized meat cattle raising as the source of high quality beef.

Regions in Kazakhstan, the North Caucasus, the Urals, the Volga (Povolzh'ye), West and East Siberia, and the piedmont and mountain regions of Central Asia and the Trans-Caucasus have good conditions for raising cattle for meat.

Major significance is acquired in this regard by the increased fodder intensity of huge territories and pastures in regions of range animal husbandry, the climatic conditions of which make it possible to obtain sizable amounts of beef.

Meat cattle raising is now moving from its traditional locations to regions of developed grain growing in the RSFSR, the Ukraine, Belorussia, and other union republics, where the overwhelming majority of land is tilled. Some large kolkhozes and sovkhozes in these zones, raising cattle for meat, have achieved high sales weights (500 - 600 kg and more).

In order to accelerate the development of meat cattle raising it is planned to increase capital investments directed towards strengthening existing specialized meat sovkhozes, and to create new farms in various zones. It is planned to specialize farms and entire regions in the raising of meat breeds. Economic measures are also being worked out to stimulate the sector's development.

The intensive development of swine raising has an important place in increasing meat production. Pork now has second place after beef in the nation's meat balance. In 1982 swine production at all categories of farms amounted to 5.2 million tons. However, the potentials of this animal husbandry sector are still insufficiently used. Its development is delayed by the shortage of full value high quality mixed feeds, especially for young animals, and the need for process equipment. By 1990 average annual swine production should reach 7 - 7.3 million tons, i.e. 36 - 40 percent over the 10th Five-Year Plan. The basic factor ensuring the necessary growth in swine production is the increase in the number of slaughter age animals through improvements in herd reproduction and maintenance, and a simultaneous intensification of feeding.

Swine raising is most developed in the Ukraine, the Baltic republics, Belorussia, Moldavia, the Central-Black Earth Zone oblasts, East and West Siberia, the North Caucasus and a number of other regions. This sector will be rapidly developed in the republics of Central Asia and the Trans-Caucasus.

The main path for the development of swine raising is further intensification, expanded scales of feeding through the reconstruction and expansion of existing small and medium swine raising farms at kolkhozes and sovkhozes, their conversion to industrial technology, and the construction of new complexes and enterprises.

In recent years a great deal of work has been done in these directions. It is characterized by new changes in the organization, technology, and economics of swine raising. It includes the construction and operational introduction of 527 large industrial swine raising complexes with a production volume exceeding 1 million tons (live weight) annually. They account for 27 percent of swine production in the public sector. The majority of large swine raising enterprises obtain high weight gains; less is spent on the production of 1 quintal of pork compared to ordinary farms: 2 - 3 fold less feed and 3 - 4 fold less labor. In addition, production costs are significantly lower.

For example, the Il'inogorskiy Complex in Gorkiy Oblast annually feeds 216,000 swine. The average daily weight gain during feeding is 638 grams, compared to 345 grams obtained at RSFSR sovkhozes during 1981. The respective figures for each quintal of weight gain are 4.2 and 8.9 fodder units, 2.3 and 18 labor hours, while production costs were 86 rubles and 178 rubles.

The high technical economic indicators at swine raising complexes have been attained through the introduction of progressive technology with high levels of mechanization and automation, the feeding of balanced rations, the creation of optimal conditions for each group of animals, and the organization of a scientifically based system of breeding and reproduction operations.

The experiences of progressive kolkhozes and sovkhozes show that industrial methods of swine raising can be successfully used at farms with comparatively small production volumes.

The reconstruction of existing farms is a reliable way of solving this problem. Practice shows that this is less expensive than the construction of new facilities. For example, during the 10th Five-Year Plan the number of pig stalls increased by 1.8 fold at Estonian SSR kolkhozes and sovkhozes. The reconstruction and expansion of facilities accounted for 72 percent and new construction 28 percent of the total additional facilities introduced in the sector. It costs one-fifth as much to remodel facilities for an additional animal as it does to build new ones.

Farm reconstruction considerably increases swine production at existing areas, promotes the introduction of new technology for keeping animals, for reducing labor costs, increasing animal productivity, and creating favorable work conditions for service personnel.

Unspecialized kolkhozes and sovkhozes have great potentials for increasing swine production. At the beginning of the 11th Five-Year Plan 15,800 farms (33 percent) did not have swine. Each farm, independently of its specialization, should be able to meet its own demand for pork and satisfy the population's needs for suckling pigs to raise.

Commercial crossing and hybridization are an important reserve for improving swine productivity. If there are good feeding and maintenance conditions the introduction of these reproduction methods permits, through hybrid vigour, a 5 - 10 percent increase in average daily weight gain and a 5 - 8 percent reduction in feed use for weight gain.

Conditions for the widespread introduction of hybridization have been created at kolkhozes and sovkhozes. The nation is now raising 16 domestic and 7 foreign highly productive breeds of swine, and creating new specialized meat lines, crosses, and hybrids, ensuring average daily weight gains exceeding 600 grams under industrial process conditions.

In order to implement a long term program for the improvement of breed stock it is planned to create 12 large centers for raising hybrid swine intended for industrial complexes and commercial farms. It is also foreseen to increase the

number of breed swine raising farms and the size of their sow herd. Breed reproductive farms will be built at each 54,000 and 108,000 head complex and 12,000 or 24,000 head enterprise. It is intended to organize breed reproduction centers (reprodukторы) or breed sectors at them.

Swine production at large industrial enterprises will be based primarily on concentrated feeds. Therefore increases in the production of full value high quality mixed feeds are obligatory for the sector's intensification. Potatoes, produce wastes and green fodder should account for a sizable proportion of swine rations at small and medium farms. It is planned to use food wastes, and wastes from the dairy, food, and other sectors more efficiently.

There are considerable reserves for increasing the output of sheep raising, a sector of animal husbandry based on the use of natural fodder lands. In general, however, the standards of sheep feeding in a number of regions remain low.

In recent years a number of oblasts in the RSFSR, the Ukraine and Kazakhstan have not given the necessary attention to the development of a fodder base for sheep raising, especially to productivity improvements at natural hayfields and pastures. Herd reproduction has deteriorated at many farms. In violations of established procedures up to 30 percent of the ewes are culled for slaughter, compared to 15-16 percent called for by zootechnical norms. The average weight per sheep sold to the state has declined and there are still large losses and distress slaughtering. There have been considerable declines in mutton production at farms of the population. At present all categories of farms obtain about 0.9 million tons of mutton, by the end of the 12th Five-Year Plan this figure should rise to 1.2 - 1.2 million tons, i.e. by 42 - 54 percent, compared to 1981. Mutton will account for 6 percent of meat production.

The intensification of sheep raising presumes improvement in the use of fodder lands, the creation of improved hayfields and pastures, the complete supply of all sheep with feeds, including emergency reserves, and more complete feeding.

Sheep raising will receive the most development in Kazakhstan, West and East Siberia, Kirgizia, as well as in the traditional areas -- North Caucasus, the southern regions of the Ukraine and the Volga area. There will be continued expansion of meat-wool sheep raising zones in the nation's central oblasts, West Siberia, North Caucasus, the Baltic republics, the Ukraine, Kazakhstan, and the Central Asian republics. Large scale measures for the development of sheep raising are planned for Turkmenia and Tadzhikistan.

In recent years industrial technologies have become widespread in various zones. The nation now has more than 270 comprehensively mechanized sheep raising farms with a total capacity of 1.5 million ewes, and there are 1,300 mechanized lots for the simultaneous raising and fattening of 7 million sheep.

One can judge the efficiency of sheep raising on an industrial basis from the experience of the 40 Years of October Kolkhoz in Panfilovskiy Rayon, Taldy-Kurgan Oblast. Its mechanized lot annually feeds and sells the state about 20,000 sheep with an average live weight of 60 kg. The feeding of 1 sheep yields 28.2 rubles in profit, and the profitability of mutton reaches 40 percent.

The main direction for the sector's development in the 11th and 12th Five-Year Plans is further concentration and specialization, based upon the widespread introduction of industrial technology. By 1990 it is planned to increase sheep feeding and finishing at lots to 20 - 25 million head, or by 3 fold.

The private subsidiary farms of kolkhozniks, workers and employees have great potential for supplementing meat supplies. At present they account for about 30 percent of total meat production. These farms maintain 23 million head of large horned cattle, 15 million swine, and 30 million sheep and goats, or about 20 percent of the nation's total herd.

However, the potentials of such private subsidiary farms have not been exhausted. Over the past 15 years the livestock herd at such farms has declined: large horned cattle by 4.8 million; swine by 4.2 million; sheep and goats by 2 million. At present a considerable share of kolkhoznik, worker and employee families living in rural areas do not keep livestock or poultry.

At the beginning of 1982 about 45 percent of rural dwellers' farms did not have large horned cattle, and more than half did not have cows.

In order to expand meat production at private subsidiary farms it is intended to considerably expand the sales of piglets and young poultry for raising and feeding.

The system of contracts between kolkhozes and sovkhozes and the population for animal finishing and feeding will receive widespread dissemination.

A major role is given to the further development of dairy animal husbandry in the implementation of the Food Program. During the 12th Five-Year Plan average annual milk production should reach 104 - 106 million tons, or a 14 - 16 million ton increase over 1982. It is planned to obtain the main growth in gross milk production through increased cow productivity. The implementation of the planned program will increase milk and dairy product consumption from 304 kg in 1981 to 330 - 340 kg by the end of the 12th Five-Year Plan.

The main ways for increasing the productivity of dairy animals are the rational organization of production, the introduction of progressive technology, the strengthening of the feed base, effective methods of selection and breeding operations, and intensive reproduction of the herd.

Dairy animal raising occurs in all the union republics. However, this sector is developing the most rapidly around large cities and industrial centers. Relatively high growth rates in milk production are planned for regions with traditional structures of animal hysbandry having sufficient areas of natural hayfields and pastures: in the Baltic republics, Belorussia, the Non-Black Earth Zone of the RSFSR, Siberia, and the western oblasts of the Ukrainian SSR. In the republics of Central Asia and the Trans-Caucasus the problem of supplying the population with whole milk and milk products will be solved primarily through their production at the place of consumption.

The main condition for increasing milk production and improving its profitability is increasing dairy animal productivity. This approach to the sector's growth permits the most rational use of animals, feed, facilities, and labor.

The increase in the proportion of specialized dairy animals is a significant reserve for raising the gross production of milk. For example, at present the average milk yield per cow of the black mottled (chernopestryy) breed is, all other conditions being equal, 200 - 300 kg higher than for other breeds. Animals of this breed are better adapted to industrial technology. Just through increasing the proportion of this breed from its present 18.7 percent to 30-35 percent, it would, in the long term, be possible to increase gross milk yield by 1.5 to 2 million tons.

Selection and breeding work is an important element of animal husbandry. The intensification of dairy animal husbandry presents breeders with new tasks: to create animals combining high productivity and good product quality with adaptability to industrial production conditions and resistance to a number of diseases.

The system of herd reproduction developed by Soviet scientists making it possible to obtain tens of thousands of descendants from one highly valuable animal provides the potential to considerably accelerate the creation of new breeds and types of animals. Increased milk productivity is to a great extent linked to the use of world genetic resources. The extensive use of Holstein-Friesian cattle is a vivid example of the effective influence of these resources on dairy cattle in various nations. In our country hundreds of thousands of cows and heifers have been crossed with bulls of this variety. With good feed and optimal conditions the resulting animals produce 500 - 1,000 kg of milk per lactation more than their mothers. They also have several valuable qualities necessary for industrial operations in the sector. Such work has become widespread in the Baltic republics, Moscow, Leningrad, Kiev, and a number of other oblasts.

In the immediate years ahead specialists are faced with the task of creating in the Central and Central-Non-Black Earth regions of the RSFSR, the Ukraine, and the Baltic republics, the necessary quantity of Holstein-Friesian cattle to improve black mottled, red and Simmental cattle.

The organization of the directed raising of young animals and the supplying of farms with highly productive animals suitable for industrial technology are important elements in the milk production process. This problem is becoming especially acute. Many kolkhozes and sovkhozes annually fail to produce large quantities of milk due to the high rate of barrenness in the female herd and shortcomings in the raising of replacement heifers. The flow line and shop system in dairy cattle raising is a large reserve for improving herd reproduction.

The flow line and shop method has now been introduced at more than 8,000 farms with a total herd of 5 million cows. By 1990 about 38,000 farms with a total herd of more than 19 million cows, 64 percent of all bearing age female cows at kolkhozes and sovkhozes, will use this technology.

The experience of progressive farms in this nation and in foreign nations with developed dairy cattle raising proves the possibility of sufficiently rapidly increases in productivity with an annual replacement of 25 - 30 percent of the cows by properly raised replacement heifers. This measure is economically justified since the intensive replacement of bearing age animals increases milk yield, the number of calves, and meat production.

The improvement of replacement animal raising requires increases in the level and completeness of feeding, and substantial improvements in cattle stabling conditions at kolkhozes and sovkhozes. The task is to see that by fertilization time at 16 - 18 months the live weight of replacement heifers reaches 320 - 350 kg.

The intensification of dairy animal husbandry is inseparably linked to its conversion to an industrial basis. Considerable work in this direction has been done in the nation. The better industrial farms and complexes have high productivity and sharp reductions in labor outlays. These results were obtained by the correct organization of production, the strict observation of technology, and above all by sufficient feed supplies.

Large complexes for milk production at the Kolkhoz imeni Vladimir Il'ich in Moscow Oblast, the Kolkhoz imeni Lenin in Tula Oblast, the 9th of May in the Estonian SSR, the Vorsino in Kaluga Oblast, and many others obtain an average of 4,000 - 5,000 kg of milk per cow annually, while labor time per quintal is 1.5 - 2.5 hours.

In order to successfully introduce industrial processes in dairy animal husbandry it is intended to create highly productive fodder lands at each farm. These will amount to about 0.3 - 0.5 hectares per cow, be on irrigated land, and substantially improve the supply of coarse and succulent fodder.

The reconstruction of existing farms is a promising direction in the industrialization of dairy operations. The introduction of progressive technology at all dairy farms, the use of comprehensively mechanized processes and rational labor organization reduces labor costs per unit and increases milk production profitability. The successful completion of these plans requires the more active struggle against losses of output, the elimination of factors causing quality deterioration, and a sizable expansion in picking up output at the production site. In order to carry out the Food Program it is intended to substantially expand the network of enterprises processing animal products, and to considerably increase the production of specialized, large capacity trucks and trailers for hauling stock and milk. This will make possible a reduction in delivery radius and time, and the conversion to pickup directly from the production site. Special importance is being given to the development and introduction of waste-free processes in the meat and dairy industry, in particular to the creation of equipment for the processing of skim milk and whey.

The increased production of animal products and the improved efficiency of agricultural production in our nation, the solution of the large economic and social tasks put forward by the party for the new five-year plan will improve the population's supply of food products.

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REGIONAL DEVELOPMENT

SHORTCOMINGS OF NONCHERNOZEM ZONE CROP PRODUCTION EXAMINED

Moscow ZAKUPKI SEL'SKOKHOZYAYSTVENNYKH PRODUKTOV in Russian No 4, Apr 83 pp 1-4

Article: "More Complete Use of the Reserves of the Nonchernozem Zone"

Text The great Russian scientists Dokuchayev, Pryanishnikov and Timiryazev, in planning and developing our domestic agricultural science -- soil science, agrochemistry and physiology of plants -- focused attention on a very rich area -- the nonchernozem zone of Russia. Here nature itself has created the conditions required for the intensive development of both farming and animal husbandry. A moderate temperature regime, an abundance of moisture and potentially fertile soils favor the cultivation of all agricultural crops. This zone is the principal region for the cultivation of such age-old Russian food crops as rye and buckwheat. It was here that the cultivation of Arzamas, Spasskiy and Rostov varieties of onions first came into being.

An abundance of meadows rich with a botanical variety of nutritious grasses served as the foundation for creating such highly productive strains of large-horned cattle as Yaroslavl, Kholmogorskiy and Sychevo. Favorable conditions for the cultivation of potatoes promoted the development of swine husbandry. It was here that our celebrated Russian flax was first developed, the production of which not only meets the population's requirements but also serves as a source for trade in flax fibres abroad.

The nonchernozem zone of Russia is a region of great potential opportunities for further increasing the production and procurements of agricultural products. It is here that roughly 60 percent of the sowing areas for rye and buckwheat and approximately 70 percent of the potato and almost all of the spinning flax growing areas are located and it is here that more than one third of the animal husbandry products of the RSFSR are produced.

The increasing amounts of capital investments for land reclamation work, the considerable increase that has taken place in the deliveries to kolkhozes and sovkhozes of diverse types of equipment and mineral fertilizers and specialization and concentration in agricultural production have had a positive effect on growth in the procurements of agricultural products. At the same time, as pointed out in the decision handed down during the May (1982) Plenum of the CPSU Central Committee entitled "The USSR Food Program for the Period Up To 1990," the level of production and procurements of agricultural

products is still not in keeping with the increasing requirements of the Soviet people. This estimate applies fully to the oblasts of the nonchernozem zone.

The nonchernozem zone is a region for the cultivation of an age-old Russian grain -- rye. However, in recent years the production level for this crop has decreased sharply in a number of oblasts and this has led to a reduction in the deliveries of this crop to the state's resources. For example, compared to the 1966-1970 period when on the average 1.49 million tons of rye were procured annually, during the 1976-1980 period -- only 815,000 tons. During the years of the 10th Five-Year Plan, not one of the 25 oblasts of the nonchernozem zone succeeded in fulfilling their established plan for selling rye to the state even on one occasion.

It is known that the state plans procurements by crops. For the majority of oblasts in the nonchernozem zone, rye, buckwheat, barley, oats and in negligible amounts -- wheat -- predominate in the grain procurement plan. The state plans to obtain from the farms in a particular zone not just grain generally, but rather grain for those crops which are embodied in the plan and which are required for supplying to the population on a regular basis.

The reason cited by some farm leaders for the reduced amount of attention being given to the production of rye -- its low cropping power -- will not stand up against criticism. Any crop will be unproductive and economically unprofitable if it is cultivated in an irresponsible manner. At the same time, in those areas where rye production is handled in an efficient manner, it produces high and stable yields under all types of weather conditions, such as for example in Shilovskiy Rayon in Ryazan Oblast. Here a search is constantly being carried out for intensive type varieties which are better, and more adaptable and more responsive to improved cultivation conditions and, in addition, improvements are being carried out in the agricultural practices and technology for the cultivation of this crop. Up until recently, the Khar'kovskaya-60 variety was employed most extensively in the rayon and yet in recent years more and more use has been made of the highly productive Start and Chulpan varieties. At the Novyy Put' Kolkhoz in this rayon, rye yields of 26 quintals per hectare have become a common occurrence, at the Shilovskiy Sovkhoz -- 23 and at the Pravda and Sonskoy Sovkhozes -- 20 quintals from each hectare of sowing.

Research work, the experience acquired by the rayon's agronomical service and many years of practical work by leading farms have convincingly proven that high and stable yields of rye are directly dependent upon the observance of the technological requirements for its cultivation and particularly upon the creation of fine wintering conditions.

By taking advantage of the achievements of the agronomical service and leading practice, hundreds of farms in other oblasts of this zone are from year to year obtaining high rye yields. Yields of from 30 to 35 quintals of grain are being obtained from sod-podzolic soils at the Krasnyy Oktyabr' Kolkhoz in Sonkovskiy Rayon in Kalinin Oblast, at the Gdovskiy Sovkhoz in Pskov Oblast, at the Kolkhoz imeni Radishchev in Smolensk Oblast and at many other farms.

The attraction to the growing of wheat in Kalinin, Kaluga, Ivanovo, Kostroma, Orel and some other oblasts in the zone is causing harm to the production of crops considered to be more valuable for this zone (rye, barley, oats) and it

is also adversely affecting the farm economies and the interests of the country as a whole. The quality of the wheat being grown in this zone for adding to the state's resources precludes the possibility of it being used for the baking of bread and instead it is used for mixed feed purposes. Similar to a forage crop, its nutritional value is inferior to other feeds. Thus the state has established higher procurement prices for rye in oblasts of the nonchernozem zone, thus making it a profitable crop for the farms.

A second food crop that has been overlooked unjustifiably in the nonchernozem zone is that of buckwheat. The neglectful attitude towards this crop is manifested not only in a reduction in its sowing areas but also in violations of the elementary requirements for its cultivation. In a majority of oblasts in the nonchernozem zone, where this crop has been cultivated since olden times, it is being grown on poor soils and in the absence of fertilization, seed production and strain changing systems. In addition, the conditions required for pollination during the blossoming season are not being created. As a result, this crop has become an unprofitable one, with its cropping power in a number of areas not even being sufficient to warrant even the gathering up of seed.

At the same time, buckwheat is furnishing high and stable yields in those areas where attention is being given to this crop. In this same Ryazan Oblast, at the Svetlyy Put' Kolkhoz in Skopinskiy Rayon, which is under the direction of the experienced chairman A.N. Akimov, yields of not less than 16-18 quintals per hectare are being obtained from an area in excess of 100 hectares during all types of weather. In 1982, at the Rodina Kolkhoz in Tsil'skiy Rayon in Gorkiy Oblast (chairman Sh.K. Sadskov), a yield of 12.3 quintals was obtained from each of 100 hectares and 58 tons of buckwheat were sold to the state against a plan calling for only 25 tons.

Over the past 5 years, yields of from 9 to 13 quintals per hectare have been obtained at the Vlast' Truda Kolkhoz in Kromskiy Rayon in Orel Oblast and each year the established plans for the procurements of this crop are being fulfilled. Other such farms are also to be found in other oblasts throughout the zone. Unfortunately however, their experience has not been disseminated adequately and the requirements of the agricultural organs for kolkhoz and sovkhоз specialists and leaders for ensuring observance of the agricultural practices used in the cultivation of buckwheat are extremely inadequate.

In implementing the decisions handed down during the May (1982) Plenum of the CPSU Central Committee, the party, soviet, agricultural and procurement organs of oblasts in the nonchernozem zone critically analyzed the existing situation and they developed and implemented specific measures for eliminating the shortcomings in the production and procurements of grain and many of them achieved considerable successes in 1982. All of the oblasts and autonomous republics in the nonchernozem zone fulfilled their plans and socialist obligations for selling grain to the state. Last year the rye procurement plan for the zone as a whole was fulfilled by 120 percent and more buckwheat, barley and oats were added to the state resources than has been the case in past years.

The 1983 winter crops emerged from under the snow in a well developed state and this will guarantee a high yield of grain. High quality seed for all of

the crops has been prepared for the spring sowing. A complex of winter agrotechnical measures was carried out at the kolkhozes and sovkhozes: the equipment was prepared and the necessary personnel trained so as to ensure that the spring sowing and tending of the crops would be carried out at a high agrotechnical level. In turn, this would ensure the planned grain yields and at the same time it would make a worthy contribution towards the implementation of the country's food program.

Quite properly, potatoes are considered to be our secondary grain. The largest potato growing oblasts of the nonchernozem zone are Bryansk, Gorkiy, Ryazan, Kalinin and Moscow, in each of which this crop is planted on an area in excess of 100,000 hectares. Considerable work is being carried out in these and many other oblasts in connection with farm specialization and concentration in the production of potatoes, the logistical base is being strengthened and improvements are being carried out in the potato cultivation technology. This has made it possible to convert potato production into a highly productive branch.

The operational experience of specialized sovkhozes in Moscow, Leningrad, Gorkiy and Bryansk Oblasts has shown that the cropping power for potatoes is higher on such farms by a factor of 1.5 than it is at non-specialized farms, with the production cost for a quintal of potatoes being lower by 23 percent.

The experience of organizational work carried out by the agricultural and procurement organs in Leningrad Oblast is deserving of support and dissemination on an extensive scale. Here the rates for the production and sale of potatoes are being intensified in a planned manner, a progressive form for procurements is being introduced into operations on the farms in a more active manner than in other areas and the problem of creating a logistical base for storing the potatoes both at the kolkhozes, sovkhozes and procurement organizations is being solved as part of an overall complex of problems. All of this has a very positive effect on the level of production and on reducing product losses.

The experience of leading farms throughout the zone reveals that as a result of the introduction of a progressive technology and the efficient use of equipment, the expenditures for potato production operations can be lowered by a factor of 1.5-2 compared to actual expenditures. Thus, compared to Moscow Oblast where the average expenditures for producing 1 quintal of potatoes amount to approximately 3 man-hours, at the Rogachevskiy, Izmaylovskiy, Zaokskiy and a number of other sovkhozes they do not exceed 1.5-2 man-hours. Many leading farms in other oblasts of the nonchernozem zone have similar indicators.

A most important condition for obtaining fine potato yields is that of correctly organized seed production and strain renovation work. But very little attention is being given to seed production in a number of oblasts throughout the zone. For example, the proportion of high quality sowings on farms in Ivanovo Oblast is 39 percent, Kirov Oblast -- 36, Kostroma Oblast -- 44, Perm -- 28 percent. Thus the cropping power for potatoes is low here and the plans for selling them to the state are not being fulfilled.

The elimination of these and many other shortcomings is completely dependent upon the agricultural specialists. An important role can be played by active work on the part of the rayon and oblast state inspectorates, which must display efficiency and high principles in providing assistance in preventing shortcomings in the organization of potato production and procurement operations.

In discussing the agricultural reserves of the nonchernozem zone, the production of spinning flax, one of the zone's leading technical crops, cannot be overlooked. As no other crop, flax requires efficient, business-like and mutual relationships between the farms and procurement-processing enterprises and flax plants.

Much work has been carried out in past years in the development of flax production. However, owing to both objective and subjective factors, the level for flax production and procurements in past years has not only not increased but in fact it has even decreased in a number of oblasts in the nonchernozem zone, especially in Kalinin, Pskov, Novgorod, Kirov and Gorkiy oblasts. The chief reason for this lies in the fact that, notwithstanding the measures undertaken, there has been no grouping of machines or mechanisms up until the present time for the all-round mechanization of the technological cycle for the cultivation, harvesting and processing of the crop. Thus, just as in the past, flax continues to be one of the most labor intensive crops.

Up until recently, many farms have not had highly productive machines for the processing and drying of flax materials, which has been one of the reasons for neglect in the production of seed for spinning flax and this has led to a reduction in the sowing areas and, in a number of instances, to a reduction in the profitability of flax production.

It is known that the harvesting of flax under poor weather conditions can lead to great losses. The actual yields of fibre and seed in the nonchernozem zone are less than one half of the quantities grown. There is a saying which holds that flax thrives twice -- in the field and at the plant. Hence the conclusion -- it must be cherished by both the farmers and the processing workers.

The flax growers on many farms in Kalinin, Kostroma, Vologda and some other oblasts in the nonchernozem zone, in collaboration with science and leading practice, are overcoming their difficulties, achieving high yields in flax materials and seed and are fulfilling their established plans for selling products to the state. However, flax production on the whole is on the rise, in a firm and reliable manner, only in Smolensk Oblast. Here, despite the difficulties characteristic of the entire zone and under all types of weather conditions, production is being increased and improvements are being realized in quality and in fulfillment of the state plan for the sale of flax raw materials and seed. One out of every five tons of Russian flax fibre is Smolensk fibre. During the years of the 10th Five-Year Plan, the average gross yield of fibre was 38,200 tons and flax seed -- 22,900 tons. Occupying seven percent of the arable land, flax provides the farms with two thirds of the income realized from field crop husbandry.

Last year the flax growers in Smolensk Oblast sold more than 44,000 tons of flax fibre to the state, fulfilling their plan by 115 percent. The plan for supplying flax seed was also over-fulfilled. Typically, while maintaining 100,000 hectares of sowing areas, increases were achieved here in the production and deliveries of products as a result of having raised cropping power and quality.

The operational experience of flax growers in Smolensk Oblast convincingly reveals that a reduction in the level of production and sale of flax to the state in a number of oblasts cannot be explained either by weather conditions or by the level of mechanization or labor intensiveness. This experience also testifies to the fact that it is possible and necessary in any oblast, within a very brief period of time, not only to restore but also to increase the level of production for this valuable and necessary raw material.

The party and government are devoting constant attention to the development of the nonchernozem zone. A new manifestation of this concern is the recently adopted decree of the CPSU Central Committee and the USSR Council of Ministers entitled "Further Development and Improvements in Agricultural Efficiency in the Nonchernozem Zone of the RSFSR During the 1981-1985 Period." Based upon further intensification of agriculture, this decree calls for extensive land reclamation work, all-round mechanization, the use of chemical processes, specialization and concentration of agricultural production, inter-farm cooperation, the introduction of scientific and engineering achievements and leading experience into operations and an increase of 30 percent during 1985 in the gross output of kolkhozes and sovkhozes compared to the level achieved during the 10th Five-Year Plan.

The plans call for 39.3 billion rubles worth of capital investments to be allocated for implementing the program for agricultural development in this zone. During the 11th Five-Year Plan alone, the plans call for the delivery of 390,000 tractors, 254,900 trucks, 104,000 grain harvesting combines and many other items of equipment.

During the five-year period, the plans call for almost 2 million hectares of drained and irrigated land to be placed in operation, for soil improvement work to be carried out on an area in excess of 2.5 million hectares, for the liming of 18.4 million hectares of acid soils, for the procurement and shipping of 424 million tons of peat and for the application of up to 230 million tons of organic fertilizer to the soil prior to 1985. A requirement exists for raising the level of mechanization in the cultivation and harvesting of potatoes, using potato harvesting combines and mechanized potato-sorting points, to 80 percent. The plans call for further mechanization in the cultivation of other agricultural crops.

Guided by the decisions handed down during the May and November (1982) Plenums of the CPSU Central Committee, a critical analysis has been carried out in all oblasts and autonomous republics in the zone on the status of agriculture and measures have been developed for improving the administration of the agroindustrial complex, such that further increases can be achieved this year in the production and procurements of all types of agricultural products and, on this basis, strengthen the economies of the farms and satisfy more

completely the requirements of the Soviet people for food products and those of industry -- for agricultural raw materials.

The implementation of the tasks falling out of the decisions handed down during the May and November (1982) Plenums of the CPSU Central Committee requires the leaders of all organs belonging to the agroindustrial complex to achieve a decisive increase in responsibility for the observance of all-state interests, for the elimination of negative phenomena which adversely affect the level of production and the fulfillment of state plans for the procurements of agricultural products and for strengthening the organizational role played by the procurement apparatus in the campaign to ensure that each farm and procurement specialist observes the obligations imposed upon them.

In addition to raising the responsibility of the ministries of agriculture, fruit and vegetable industry and all other ministries and departments belonging to the agroindustrial complex, for the production of goods in volumes which will guarantee fulfillment of the plans for selling such goods to the state, an immeasurable increase will take place in the responsibility of the Ministry of Procurements and its organs in the various areas -- oblast, republic, kray and rayon state inspectorates for procurements and the quality of agricultural products -- for achieving radical improvements in organizational work in the interest of completely uncovering commodity resources, eliminating mismanagement and irresponsibility and raising the exactingness of the parties with regard to unconditional fulfillment of contractual agreements in terms of both the quantity and especially the quality of the agricultural products produced and delivered to the state.

The state inspectorates for procurements and the quality of agricultural products in the nonchernozem zone have accumulated rich experience. Many of them are true organizers of procurement operations, they take an active part in eliminating negative phenomena and they are achieving harmonious work on the part of the agricultural and procurement organs. Included among them are the state procurement inspectorates for Leningrad, Sverdlovsk, Moscow and Smolensk Oblasts and some others.

These inspectorates are characterized by business-like operations, high principles and fine exactingness on the part of all workers attached to the procurement system and farm leaders, for the unconditional observance of state procurement discipline, the production of goods in a fine assortment, high quality preparation of the products for delivery, correct evaluation and payments for the products accepted by the procurement specialists and the protection and timely delivery of the products to the consumer.

In the work of these state inspectorates, a distinctive feature is the close contacts and business-like relationships which they have achieved between the producers and procurement specialists for the agricultural products. Many problems arise on a daily basis in the practical work being performed by these inspectorates. And although in Kaluga, Orel, Novgorod and Mary these problem often remain unsolved by the inspectorates, in Smolensk and Moscow they are being solved in an efficient and objective manner. Here we have in mind the organization of potato and vegetable deliveries in Moscow Oblast using the field-to-store method or the delivery of flax in Smolensk Oblast using the field-to-flax plant method.

All of the positive experience that has been accumulated in the work of these and some other inspectorates is being disseminated and introduced on an

extensive scale in all of the other oblasts, krays and ASSR's. The degree to which this experience is introduced and its effectiveness is greatly dependent upon a fine fighting spirit and high principles being displayed in the work carried out mainly by the rayon state inspectorates and this in turn is dependent upon the operational style and methods of the oblast and republic state inspectorates.

Since the initial creation of the state inspectorates, they have been directed by M.G. Kabanov in Pskov Oblast, F.L. Vorontsov in Vladimir Oblast, Yu.Ya. Golubev in Ivanovo Oblast, V.I. Yefremenkov in Kaluga Oblast, I.S. Makeyev in Ryazan Oblast and L.A. Zubarev in Gorkiy Oblast. Each one of these individuals has made a definite contribution towards improving the procurement operations and yet from the standpoint of the requirements handed down during the May and November (1982) Plenums of the CPSU Central Committee, which called for an examination of their operations, it must be noted that the work is far from complete. Nor is it simply a matter of the procurement plans for many field crop husbandry and animal husbandry products not being fulfilled in these oblasts in recent years. Rather the problem has to do more with the fact that the state inspectorates have not established high-principled and exacting relationships with the leaders of both the agricultural and procurement organs.

This prevents them from dealing properly with those leaders who, despite the opportunities at their disposal, look to their neighbor, ignore the interests of the state, stand on their seniority and display a lack of discipline and instead of turning products over to the state either use them for intra-farm needs or squander them. Thus it is by no means an accident that in these oblasts despite the increasing amounts of capital investments being employed for agricultural production and the considerably greater quantities of mineral fertilizers and soil cultivation and harvesting equipment being made available than has been the case in past years, the cropping power of the grain, flax, potatoes and vegetables is not increasing, the production costs for these crops are increasing and profitability declining and, as a result, the plans for the production and sale of products are not being carried out and state procurement discipline is diminishing.

Only this can explain the fact that in a majority of the mentioned oblasts (with the exception of Pskov Oblast) the procurement plans are not being fulfilled not only for those types of products which are produced insufficiently for plan fulfillment but also for such crops as hay and grass meal, for which there is an abundance of natural resources.

It should be borne in mind that 1983 -- the pivotal year of the 11th Five-Year Plan -- can and must become the decisive year for unconditional fulfillment of the five-year tasks on the whole. A guarantee for this is the improving logistical base for both the agricultural enterprises and procurement organizations and also the level achieved for the production and procurements of the principal products in 1982.

"The food program" stated Comrade Yu.V. Andropov during the November (1982) Plenum of the CPSU Central Committee, the general secretary of the CPSU Central Committee, "is a task that cannot be carried out in just one day. Solutions

must be found without delay for the new tasks and they must be examined in close association with the radical trends in the development of the agroindustrial complex, bearing in mind that we are speaking here about the complex, in which there are no tasks of a secondary nature."

During a meeting of the Politburo of the CPSU Central Committee in late April of this year, mention was made of the need for developing a new administrative style and raising the responsibility of the kolkhozes and sovkhozes with regard to fulfilling the state plans for procurements of agricultural products. In carrying out their practical work, the state inspectorates for procurements and the quality of agricultural products must undertake all measures required for carrying out these instructions of the Politburo of the CPSU Central Committee.

The implementation of these instructions, the waging of a decisive campaign against mismanagement, waste and lack of organization, the thrifty use of material and labor resources on each farm and improvements in personnel responsibility for the observance of all-state interests -- this then is the direction to be followed in the work being carried out by the oblast and rayon state inspectorates; it will ensure fulfillment of the requirements of the party and government for further improving agriculture and successfully fulfilling the food program of the USSR.

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AGRO-ECONOMICS AND ORGANIZATION

SOVIET AGRICULTURAL COLLABORATION WITH CZECHOSLOVAKIA, BULGARIA

Moscow SEL'SKAYA ZHIZN' in Russian 1 May 83 p 3

Article by A. Shamonin, secretary of the Moscow CPSU Obkom, V. Dzharkylov, secretary of the Sofia Okrug Committee of the Bulgarian Communist Party, and V. Shindelarzh, secretary of the Central Czech Obkom of the Communist Party of Czechoslovakia: "Mutual Experience Enriches" /

Text Many republics, krays, oblasts and rayons of the Soviet Union maintain close friendly contacts with their fellow workers in the fraternal socialist countries. This cooperation is most effective in places where it is placed on a businesslike, creative basis and directed toward mutual enrichment with experience and consistent introduction of this experience into practice. The materials that are published today discuss how this experience in agriculture is being used in the Moscow area and the similar areas of Czechoslovakia and Bulgaria. The articles have been prepared jointly by the editorial staffs of SEL'SKAYA ZHIZN' and the fraternal newspapers KOOPERATIVNO SELO (Bulgaria) and ZEMEDEL'SKE NOVINY (Czechoslovakia).

Increasingly Strong Cooperation--A. Shamonin

The exchange of advanced experience has become the norm for interrelations among agricultural workers of Moscow Oblast and their colleagues from the Central Czech Oblast of Czechoslovakia and the capital district of Bulgaria. Moscow workers attentively follow the successes of their friends in agriculture and feed production, storage and processing of products of the fields and farms, agricultural construction and agrochemical service--in all these areas we are successfully applying the experience of our fellow workers.

A delegation from the Moscow Oblast party committee, headed by the first secretary of the Obkom, V. I. Konotop, visited the Central Czech Oblast in the summer of 1981. After this trip the secretariat of the oblast committee earmarked directions for our utilization of the specific experience of our Czech friends. Much of what was earmarked has already been introduced on the Moscow farms. Take, for example, feed production. The specialists noted how extensively rape was planted on the farms of the Central Czech Oblast. Now in the Moscow area they are increasing the areas planted in this valuable feed crop--in 1982 we shall raise spring rape on 18,000 hectares, and winter rape--on 16,000.

Following the example of our Czechoslovakian friends, under the current five-year plan our farms will construct mechanized warehouses for storing and drying hay. The first of them is already in operation on the Kolkhoz imeni Kirov in Balashikhinskiy Rayon.

Close, friendly ties with partners in Czechoslovakia and Bulgaria are now being maintained by dozens of Moscow farms. The Obkom and the city and rayon party committees are attentively making sure that the trips of delegations to the fraternal countries are businesslike in nature and that the advanced practice that has been studied is immediately introduced into practice. A good opportunity to exchange progressive labor devices is provided by trips of groups of advanced production workers in order to work jointly with colleagues in the fraternal countries. For example, workers of the Leninets sovkhoz in Klinskiy Rayon have not only become familiar with advanced labor devices on the Czechoslovakian Bystritsa cooperative, but have also devoted attention to the system of storing and removing manure that is applied there. The experience of our friends is being consistently studied and introduced by the party committees of the Kolkhoz imeni Vladimir Il'ich in Leninskiy Rayon, the Put' k kommunizmu kolkhoz in Istrinskiy Rayon, the Borets kolkhoz in Ramenskiy Rayon, the Industriya sovkhoz in Kolomenskiy Rayon, the Znamya Oktyabrya sovkhoz in Podol'skiy Rayon and the Pamyat' Il'icha sovkhoz in Pushkinskiy Rayon.

Last year a group of agricultural specialists from the oblast went to the Sofie district and became familiar with the organization of subsidiary shops of agro-industrial complexes. It was decided to take advantage of this valuable experience on the kolkhozes and sovkhozes of the Moscow area.

In the capital district of Bulgaria they have arranged well the technology for deep freezing of fruits and vegetables. Having attentively studied this, the Moscow specialists even in 1982 prepared about a thousand tons of various vegetables, fruits and berries by this method.

Interesting experience in raising commercial fish and producing ducks on the same ponds was borrowed from Central Czech Oblast by specialists of the Moscow Fishing Industry. The utilization of this experience will make it possible to increase the production of duck meat on the ponds to 400 tons.

The experience of friends . . . each year it is becoming more widespread on the Moscow farms.

An Invaluable Treasure House -- V. Dzharkylov

A bright page in the chronicle of Bulgarian-Soviet friendship belongs to the fraternal relations of workers of the Sofie district and Moscow Oblast. The treasure house of soviet experience is invaluable for our workers of the fields and farms. Without the generous assistance from the great Country of the Soviets, without the achievements of Soviet science, the socialist transformations of our agriculture would have been unthinkable. The utilization in the Sofie district of Soviet strains of wheat, sunflowers, corn and sugar beets, breeds of cattle and technologies for maintaining them helped us to achieve high results in carrying out the large-scale tasks set by the 12th Congress of the Bulgarian Communist Party.

Our cooperation with our Soviet colleagues has a glorious history. After the historic April Plenum of the Central Committee of the Bulgarian Communist Party (1956) large changes took place in agriculture in the district. The assistance from our Soviet colleagues played an immense role in this. Highly productive strains of wheat--Bezostaya-1, Avrora and Kavkaz were introduced into production. They brought about a real revolution in grain farming. There was extensive application of the miraculous strains of peas, Ramonskiy-77 and Uladovskiy-303, and corn--VIR-42 and Krasnodarskiy-5. The earthing up and harvesting of potatoes were mechanized for the first time. We utilized Soviet experience extensively in organizing socialist competition as well.

Our agro-industrial complexes are cooperating productively with the Moscow farms. The Maritsa agro-industrial complex in the city of Kostenets, for example, is becoming friendly with the Leninskiy luch kolkhoz in Krasnogorskiy Rayon, and the Pravetsa agro-industrial complex--with the Borets kolkhoz in Ramenskiy Rayon. Unselfishly, in a friendly way, the Soviet partners share everything that is new in production.

And here is what cooperation with our colleagues produces for our animal husbandry workers. On the farms in Pravetsa and Osikovitsa experimental technical equipment for low-vacuum milking of cows sent from the Borets kolkhoz is operating successfully. The Maritsa agro-industrial complex is applying Soviet experience in dairy animal husbandry and the organization of breeding work as well as technology for processing and preparing feeds.

Animal husbandry workers of the Maritsa agro-industrial complex remember well how in 1977 the celebrated Soviet milkmaid, Hero of Socialist Labor V. Shchertatykh came to visit them. She worked on the dairy farm and shared her experience with her Bulgarian friends. The application of advanced methods of feeding animals and caring for them made it possible in 5 years to increase the average milk yield per cow by 1,300 liters.

Concentration and specialization of animal husbandry in the district are being carried out in keeping with the example of Moscow Oblast. We import animals of highly productive breeds and use Soviet designs for animal husbandry complexes. A number of our agro-industrial complexes maintain several hundred cows which they obtained from the Moscow area. The animals become acclimatized to local conditions rapidly and are resistant to diseases. As for sheep raising, our Soviet friends are rendering a great deal of assistance to us here. We have received from them purebred sheep of the Tsyganskaya, Severplavlazslaua and Romanovskaya breeds.

There is not a single farm in the Sofie district today which has not applied advanced Soviet experience to one degree or another.

Fruits of Friendship--V. Shindelarzh

Fraternal friendship and exchange of advanced production experience has linked the workers of the Central Czech area and Moscow Oblast for almost two decades now. Life itself fills our cooperation with new content and creates new forms.

The Zlonitse state farm and the Podol'skiy sovkhoz were among the first enterprises that did not limit themselves to establishing only official friendly contacts. Workers on these farms understand well that good contacts bring mutual advantage if they become the concern of all the workers. When our friends from Podol'skiy Rayon came to Zlonitse they not only observed the work of their colleagues, but they themselves sat down at the controls of the machines and showed how to run them so that losses of the crop would be minimal and so that the field would be cultivated in the best way. The Zlonitse farm was one of the first in Czechoslovakia to begin raising strains of wheat of the Mironovskaya selection, and our Soviet friends rendered invaluable assistance in this.

Workers of the Cooperative imeni Chekhoslovatsko-Sovetskaya Druzhba in Tukhorazy are also among the initiators of the application of advanced Soviet methods in farming. In 1977 they came out with a statewide initiative directed toward increasing the productivity of Soviet strains of wheat. It was the grain growers of the Central Czech Oblast who were first to apply the flowline method of harvesting grain crops on the basis of Soviet experience. This made it possible for many agricultural enterprises to reduce expenditures and increase labor productivity.

Agricultural specialists of our areas resolve problems of intensification of dairily farming jointly and exchange experience in raising vegetables in hot-houses. The solutions that are found jointly are then embodied in practice, taking local conditions into account. Czechoslovakian colleagues visited the Moskovskiy sovkhoz-combine in Leninskiy Rayon. They were interested in this specialized enterprise's work for raising vegetables and in the forms of socialist competition and the movement for a communist attitude toward labor. For their part, the Soviet comrades were interested in the experience of introducing daily logs of the brigades of socialist labor in the Central Czech labor. The experience that has been shared is already being utilized successfully.

Meetings in workplaces and exchange of practical skills and scientific and technical information are advantageous for both of the sister oblasts. Concrete results are being produced by the contacts between the All-Union Scientific Research and Technological Institute of Poultry Raising in Zagorsk and the selection center in Khrustenitsa. Their joint research is an important constituent part of the scientific work in the area of poultry raising that is being carried out according to the CEMA program.

One could say a great deal about the fruitful cooeration of the most varied collectives of the Central Czech and Moscow Oblasts. Agricultural workers of the sister oblasts will make a weighty contribution to the great cause of deepending and developing the friendship of the peoples of Czechoslovakia and the Soviet Union, and the strengthening of the economic potential of the entire socialist community.

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TILLING AND CROPPING TECHNOLOGY

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NEW SOYBEAN CROPPING TECHNOLOGY DESCRIBED

Omsk ZEMLYA SIBIRSKAYA DAL' NEVOSTOCHNAYA in Russian No 10, Oct 82 pp 5-6

Article by N.P. Ketova, candidate of economic sciences at the Primorskiy Agricultural Institute and A.I. Zaytsev, chief agronomist at the Stepnoye Experimental Model Farm of the Primorskiy Scientific Research Institute of Agriculture: "Effectiveness of the New Technology" /

Text The Far East is the country's principal grain growing region: it accounts for more than 90 percent of the soybean sowings. It is grown on 147,600 hectares in the Maritime Kray -- more than one fourth of all sowings in the region. Soybeans are of great national economic importance as the raw material for a number of valuable food products and as an important source for plant protein. Thus improved production efficiency is required for this crop.

At the present time, a stable trend is being observed at sovkhozes in the Maritime Kray in connection with the production costs for soybeans rising and, as a result, the profit and level of profitability decreasing. Compared to 1966 when the production cost for 1 quintal of soybeans was 14.86 rubles, in 1970 -- 18.30 rubles and by 1980 it had increased to 25.98 rubles. In 1970 the profit from the sale of soybeans compared to the overall total amount of farm profit was 41 percent and in 1980 -- only 18 percent. The reduced amount of interest in cultivating soybeans led to a reduction in its sowings during the 10th Year Plan in the Far East on the whole of 9.4 percent and in the Maritime Kray -- of 4.1 percent. Under conditions involving increasing requirements for soybeans, this represents a negative phenomenon.

A great amount of attention is being given to developing soybean production in the southern zone of the Far East and effective measures have been adopted and set forth in a number of decrees of the CPSU Central Committee, the USSR Council of Ministers and the RSFSR Council of Ministers. One such important measure is that of raising the procurement price for soybeans; this is increasing the profitability level and promoting growth in the production of soybeans.

However, in this particular branch, as in a majority of other branches, the return from investments is low. One important reason for this is the disproportion and lack of balance in the logistical base for soybean production, which tends to disrupt the completeness and dispersion of resources. Negative results are generated by the isolated nature of administration and by

the existing system of stimulation, which does not ensure high final results. The elimination of these factors, in addition to firming up the requirements with regard to observing the technology, signifies that a solution is being found for the primary task of the 11th Five-Year Plan -- thrifty use of all resources.

The resources of agricultural production must be viewed in their broad sense, that is, including the labor, land, water, power engineering, logistical, financial, biological and bioclimatic resources. It is obvious that definite principles must be observed if they are to be included in production operations in a more effective manner -- completeness, proportionality, use of standards and efficient administration.

Completeness assumes complete support for production in the form of all types of resources required for solving the established task. The principal cause of a low return from investments and resources derives from a violation of this integrity. For example, during the 1970-1980 period the amount of investments per hectare of soybean sowing increased from 75.8 to 106.5 rubles and this testifies to a raised level of production intensity. However, these investments are not being repaid in the form of corresponding growth in output. The cropping power for soybeans at sovkhozes throughout the kray during the 1971-1975 period was 6.7 and during the 1976-1980 period -- 6.9 quintals per hectare. One reason for such disparity between the level of investments and yield in products -- insufficient attention to plant breeding and seed production for soybeans. Three grain varieties of soybeans are being sown in the kray this year. The Primorskaya-529 variety has been regionalized since 1931 and at the present time it occupies 59 percent of all areas assigned for this crop. At strain testing stations throughout the kray the average cropping power during the 1978-1980 period was 11.7-15.2 and during the 10th Five-Year Plan, for the kray as a whole, it did not exceed 7.9 quintals per hectare. In all probability, it is still too early to discuss the exhaustion of the genetic potential of the variety. But a need exists for work aimed at improving it for the southern steppe and forest-steppe zones, since during years marked by an early onset of frosts and winter-kill in the plants, a sharp reduction takes place in the cropping power and oil content of the seed: only 2.3-3.0 quintals of grain are obtained per hectare. The advisability of plant breeding work is obvious based upon the results obtained from cultivating the Primorskaya-494 and Yubileynaya varieties in the northern regions, in the forest steppe and southern taiga zones of the kray: they were bred respectively at the Primorskiy NIISKh /Scientific Research Institute of Agriculture/ and the All-Union Scientific Research Institute of Soybeans. During the 10th Five-Year Plan, the cropping power for soybeans at strain testing stations throughout the kray was 18.9 and 19.8 quintals per hectare. The highest cropping power for the Primorskaya-494 variety was obtained under production conditions at the Krasnorechenskiy Sovkhoz in Kirovskiy Rayon -- 25.7 quintals per hectare. It is clear that the cultivation of the late-ripening Primorskaya-529 variety on a large portion of the kray's sowing areas does not produce a high guaranteed yield from year to year and cannot ensure an economy in resources, their efficient utilization or an increase in effectiveness and intensification.

Improvements must be achieved in soybean seed production. There are five seed production farms in the kray. One of them -- the Stepnoye OPKh /experimental model farm/ must supply soybean seed for farms in the southern zone. It

allocates elite class and 1st reproduction seed to the Yevgen'yevskiy, Khorol'skiy and Chernyshevskiy Seed Production Sovkhozes. In 1981 the OPKh sold 428 tons of soybean seed, of which amount 220 tons were of the Primorskaya-529 elite variety, 110 tons -- Primorskaya-494 and 98 tons -- Primorskaya-529 1st reproduction. But the requirements for elite seed are being satisfied by only 26-32 percent. On the whole, high quality sowings of soybeans do not exceed 30 percent throughout the kray. The low quality of the seed is restraining the return being realized from the additional expenses incurred for applying fertilizers.

The principle of proportionality requires the observance, among individual production elements in each instance, of the required quantitative proportions of a definite structure. At the present time, the kray's sovkhozes are applying 2.9-4.2 quintals of mineral fertilizer per hectare in behalf of their soybeans and during the five-year plan the cost for such fertilizer increased from 16.58 to 18.51 rubles per hectare. But this is considerably less than the norm and all too often the withdrawal of nutrients exceeds the degree to which they are added to the soil. Soybeans are very demanding with regard to fertile soil: high soybean yields can be obtained only if the land is supplied well with fertilizers, including fresh organic substances. In accordance with recommendations handed down by PrimNIISKh /Maritime Kray Scientific Research Institute of Agriculture/, no less than 7 quintals of mineral fertilizer per hectare should be applied in behalf of soybeans and in each specific instance consideration must be given to the presence of nutrients in the soil and records maintained on the fertilizers applied from year to year. On acid soils the fertilizers are combined with lime (not less than 5 tons per hectare) or phosphorite meal (2 tons). The observance of the following fertilizer proportions is mandatory: NPK - 1.0:3.0 - 3.5:1.3 - 2.0 (approximate norms: nitrogen -- 60, phosphoric acid -- 175-210, potassium -- 80-120 kilograms per hectare). Meanwhile, in actual practice, owing to failure to regulate properly the mineral fertilizer deliveries, the fertilizer is often applied without taking these requirements into account.

In the production of soybeans, a great amount of importance is attached to the expenditures for labor, seed, fertilizers, fuel and equipment. Proper attention is not being given to observing the norms for soybean production at sovkhozes throughout the kray. Thus the labor expenditures for a stable technology, per hectare of sowing, fluctuate from year to year from 10.5 to 16.5 man-hours. From the standpoint of the farms, these fluctuations are even greater. Exceeding the labor expenditures compared to the norms, in the absence of any special need for such excess, leads to considerable growth in wages. From 1971 to 1980 the expenditures for wages per quintal of soybeans increased from 2.81 to 3.90 rubles. Herein is reflected the natural process of raising the wages of agricultural workers. However the disparity between the rates of growth in these wages and the level of labor productivity is raising the price of the products considerably. The principle of norms must be observed when carrying out all of the technological operations concerned with the production of soybeans. Raising the sowing norm to more than 660,000 germinating grains per hectare, in addition to lowering the cropping power, also leads to an over-expenditure of grains. Insufficient support in the form of storehouses and well equipped transport vehicles for transporting the grain results in great losses in the products produced: each year 4-6 percent of the soybeans harvested in the kray is lost.

Under modern conditions, use must be made of new technologies. An example of a progressive technology, one which makes it possible to utilize fertilizer nutrients when optimum dosages are being applied, is a local-tape method for applying fertilizers which was developed at PrimNIISKh and which has been introduced into operations on a number of farms throughout the kray. Towards this end, use is being made of KNR-4.2 and KON-2.8 cultivators and also special attachments for plows having mineral fertilizer sowing units. The use of this technology at sovkhozes in Kirovskiy Rayon for applying dual granulated superphosphate in a dosage of 0.5-1.0 or ammophos in a dosage of 0.5-0.7 quintals per hectare, against an overall background of soil fertilization, is making it possible to obtain an increase in cropping power of 6.0-7.2 quintals per hectare.

In the cultivation of soybeans, tremendous importance is attached to strict observance of the schedules for carrying out all of the technological operations. Rather promising in this regard is an efficient technology for the mechanized cultivation of soybeans, involving the use of multiple-unit and wide-cut assemblies developed at the Maritime Kray Agricultural Institute. It is based upon the principle of combining operations. For implementing the technological solutions for this new strip method of soybean sowing, special sowing machines for attachment and towing variants have been developed and introduced into operations. The use of wide-cut assemblies for tilling such sowings is making it possible to raise labor productivity for this operation by almost threefold and to reduce the requirements for machine operator personnel by almost twofold. In the process, production line carrying out of technological processes is being achieved and the periods for sowing and inter-row tillings are being shortened. The experience accumulated in the sowing of soybeans at a training-experimental farm of the Maritime Kray Agricultural Institute serves to convince one regarding the feasibility of employing this technology. Prior to the introduction of the new technology, the training farm did not stand out among the kray's farms in terms of its soybean cropping power. For example, 7.2 quintals of soybeans per hectare were obtained here in 1970-1972. Following the introduction of the above recommendations in 1978, 15.9 quintals were obtained and during the unfavorable year of 1980 -- 13.0 quintals. The same high results were obtained from the introduction of this technology at the Privil'nyy Sovkhoz and at the Stepnoye OPKh, where during the 10th Five-Year Plan an average of 16 quintals of soybeans per hectare was obtained.

It is being employed successfully at the Primorskiy Sovkhoz, where for the past several years the Iskatei' Scientific-Production Detachment consisting of students and teachers from the Maritime Kray Agricultural Institute has been working. Strict observance of the technology and an optimum and comprehensive approach to the cultivation of soybeans are making it possible to obtain a stable cropping power here, one which surpasses the average for the 1970-1975 period by a factor of 2.7-3.0 and with low production costs.

Control over the technological process and over the branch as a whole can be effective only if use is made of all of the methods available, including economic, organizational, social and psychological methods. Thus the resources of the scientific institutes in the kray must be concentrated for the purpose of summarizing the experience accumulated in cultivating the principal crops

and in preparing the special purpose and comprehensive Soya and Ris programs, since future plans call for the creation in the kray of a rice and soybean sowing base of union subordination. An expansion in the sowings of these crops is impossible in the absence of an efficient program. Comprehensive programs for the production of the more important types of agricultural products, prepared in a number of regions throughout the country, encompass an entire totality of problems and they are making it possible to control the available resources in an efficient manner and to optimize their use in each specific instance.

The successful solving of the problem concerned with raising the efficiency of soybean production is dependent upon the competence and responsibility being displayed by the personnel at all levels -- from a tractor operator to the leader of a farm or a production agricultural administration. Thus the workers of all professions and of all ranks must constantly be taught -- they must be taught economics and the methods employed for the efficient management of a farm.

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TILLING AND CROPPING TECHNOLOGY

IMPORTANCE OF SOYBEAN CROP TO FOOD PROGRAM STRESSED

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Article by M. Popov, deputy chief of the Financial Administration of the USSR Ministry of Procurements; A. Pylov, candidate of agricultural sciences and department head at Glavzagotsemfond of the USSR Ministry of Procurements; V. Parshin, chief methodologist for the Financial Administration of the USSR Ministry of Procurements: "System of Computations for Soybeans"

Text In speaking before the November (1982) Plenum of the CPSU Central Committee, the general secretary of the CPSU Central Committee Yu.V. Andropov stated: "...the carrying out of the food program cannot be dragged out. Workers attached to the agroindustrial complex must intensify their efforts with each passing day and work in a manner such that the tremendous resources being employed for solving this task will produce a return today and an even greater one tomorrow."

Among other food crops, the production and procurements of which must be increased in the near future, a leading role is played by soybeans.

During the years of the 10th Five-Year Plan, the state procurements of soybeans in our country amounted to an average of 257,000 tons annually, of which amount 250,000 tons, or 97 percent of the overall procurements, were delivered to the state resources from farms in the Far East. The proportion of high quality seed was considerable. During the years of the 10th Five-Year Plan, an average of 21,600 tons of seed were supplied to the state resources annually and in 1982 more than 30,000 tons were procured. During the 11th Five-Year Plan, the soybean procurements for the state resources must on the whole increase by more than twofold compared to the 10th Five-Year Plan.

In the interest of stimulating grain procurements for this valuable oil-bearing and protein crop, since 1981 the procurement prices for it have been raised from 260 to 350 rubles per ton of credited weight, that is, by almost 35 percent. It bears emphasizing that the new and raised procurement prices are also being employed when computing the monetary bonuses for high quality in connection with kolkhoz and sovkhoz sales to the state of high quality soybean seed. The importance of this factor can best be judged by studying the example of the Priamur'ye Kolkhoz in Tambovskiy Rayon in Amur Oblast. In 1981 it planned to sell 7,700 tons of soybeans (gross yield -- 9,900 tons) to the state and to realize a profit of 1.5 million rubles from such sales.

Taking into account the new procurement prices, this profit increased by almost 50 percent and amounted to 2.2 million rubles. In addition, the farm obtained a considerable amount of mixed feed in the form of counter sales.

The increase in the procurement prices for soybeans places this crop in an advantageous position compared to other crops. For example, the new procurement price for a ton of soybeans at kolkhozes and sovkhozes in the Maritime Kray is 219 rubles higher than that for wheat, oats and fodder barley, 186 rubles higher than brewing barley, 190 rubles higher than rye and 240 rubles higher than millet. And on farms in Ivanovskiy, Konstantinovskiy, Mikhaylovskiy and Tambovskiy Rayons in Amur Oblast, these indicators are even higher for certain crops. Thus the procurement price for soybeans is 229 rubles higher than the price for wheat, oats and barley.

In addition to raising the procurement prices and in the interest of materially stimulating the sale of soybeans to the state, it has been established that 70 kilograms of mixed feed will be released from the state resources in the form of counter sales for each quintal of soybeans sold to the state and for each above-plan quintals of soybeans sold to the state -- 140 kilograms of mixed feed. In the process, special emphasis should be placed upon the fact that the issuing of mixed feed on the basis of counter sales for soybeans is carried out on favorable terms for the kolkhozes and sovkhozes -- using a deduction of 36 percent from the wholesale price for the mixed feed.

Batches of grain and oil-bearing crops which conform to the basic conditions in terms of quality are paid for in accordance with the procurement prices established for kolkhozes and sovkhozes. In particular, the basic moisture content for soybeans is established in the amount of 14 percent, weed content -- 2 percent and oil impurities -- 6 percent. The infestation of grain supplies by pests is not tolerated. Limiting conditions have been established for soybean procurements: for moisture content -- not more than 18 percent, content of weed and oil impurities -- 15 percent (including not more than 5 percent weed content) and winter-kill (applicable to oil impurities) of not more than 10 percent.

Meanwhile the actual quality of the soybeans being procured for the state resources is not meeting the requirements set forth in the basic conditions. Thus the moisture content of soybeans delivered to grain receiving enterprises in the Maritime Kray in 1979 fluctuated from 9 to 19 percent, in 1980 -- from 10 to 22 and in 1981 -- from 9 to 21 percent. In Amur Oblast, the batches of soybeans obtained from the 1980 harvest had a moisture content of up to 21 percent and in 1981 -- 20 percent.

In 1979 and 1980 the weed content in soybeans on farms in the Maritime Kray was higher than the basic figure by 2.5 and 3.1 percent respectively. The content of oil impurities, despite a trend towards a reduction in this content, nevertheless continues to remain higher than the basic figure; in 1979 -- 10 percent, in 1980 and 1981 -- 8 percent, figures which are higher than the basic figure by 4 and 2 percent. According to average daily samples selected from batches delivered to grain receiving enterprises in Khabarovsk Kray, the oil impurities content in 1979 was 9 and in 1980 -- 8 percent. In individual batches, the oil impurities content during these years reached 16 and 30 percent respectively.

For deviations from the basic conditions in the quality indicators for grain and oil-bearing crops delivered to grain receiving enterprises, in terms of moisture content and weed impurities, natural increases to the physical weight are carried out in the amount of 1 percent for each percent of moisture content and weed impurities lower than the basic conditions. For indicators of moisture content and weed impurities higher than the basic conditions, natural deductions are carried out from the physical weight in the same amounts. The natural increases and deductions are computed with an accuracy of up to 0.1 percent.

The physical weight of the grain and oil-bearing seed, increased or reduced by the amount of the natural increases or deductions (according to the deviations from the basic conditions for moisture content and weed impurities), is a credited weight which is paid for in accordance with the established procurement prices and which counts towards fulfillment of the state procurement plan and the contractual agreement. A natural increase or decrease is computed according to the totality of deviations in quality with regard to moisture content and weed impurities.

In the case of kolkhoz and sovkhoz deliveries of grain and seed from oil-bearing crops the moisture content and amount of weed impurities of which are higher than the basic conditions and in addition to the natural deductions, a payment is required from the farms for drying in the amount of 0.4 percent and for cleaning 0.3 percent of the procurement price, for each percent of moisture and weed content over and above the basic figure. The payment amounts for drying and cleaning have been established at the level for the average operational expenses of grain receiving enterprises of the USSR Ministry of Procurements for these operations and for the value of the losses in weight in accordance with the average procurement price for all crops on the whole, during drying and cleaning, which is not covered by the natural deductions. The indicated deductions from the grain suppliers constitute an overall source of funds for raising grain to the basic conditions in terms of both moisture content and weed impurities. It should be emphasized that for the ministry's system on the whole, the payment for the drying and cleaning of grain is not sufficient for compensating for all expenses involved in carrying out these operations.

The problem concerning the system for exacting payments for the drying and cleaning of individual grain and oil-bearing crops is often raised in the press. It is our opinion that this problem should be examined simultaneously for all grain and oil-bearing crops and not for individual crops, particularly rice and soybeans. Recommendations for establishing firm payment rates for the drying and cleaning of grain and oil-bearing crops, examining the procurement basic conditions and establishing new and scientifically sound norms for deductions and increases for deviations from the basic conditions in moisture content and amount of weed impurities have already been submitted to the interested departments. However, no decisions have as yet been handed down regarding these problems.

In connection with the increase in the procurement price for soybeans and the additional increase in the procurement prices for grain commencing 1 January 1983, the problem with regard to the system for exacting payments for the

drying and cleaning of grain and oil-bearing crops should ideally be examined taking into account the actual expenses being borne for these purposes at the present time at the grain receiving enterprises. These expenses have increased considerably compared to the 1958 level (at which time they were established and placed in operation), as a result of increases that have taken place in wages and in the prices for fuel, electric power and materials.

With regard to the procurements of high quality seed, it bears mentioning that over the past 3 years (1979-1981) in the RSFSR, mainly in the Far East, 9.3 percent of the soybean seed procured for the state resources was elite and of the 1st reproduction, 82.2 percent -- from the 2d to the 5th reproduction and 8.5 percent -- 6th and subsequent reproductions.

The situation was even worse with regard to the sowing quality of the seed procured. Thus only 12.9 percent of the soybean seed met the requirements for the 1st and 2d classes of the seed standard and 17.3 percent -- for 3d class. Approximately 69.8 percent of the seed accepted was non-graded, with 35,300 tons of the non-graded seed delivered over a period of 3 years being sub-standard in terms of germinative capacity and 11,700 tons -- in terms of impurities which were difficult to separate out. The cleaning of such seed requires great expenditures by the grain receiving enterprises and a considerable portion of the seed ends up as waste product, despite the fact that the state paid a raised procurement price for it based upon its high quality. This results in losses for the enterprises of the USSR Ministry of Procurements.

In accordance with the existing system of computations, monetary increases are paid out for high quality soybean seed in conformity with the quality of the seed, as stipulated in the contractual agreement, and for all seed of deficit and promising varieties. The monetary increases for high quality are paid out in the following amounts (in percentages of the procurement price): for super-elite seed -- 200 percent, elite -- 150, 1st and 2d reproductions corresponding to 1st class of the seed standard -- 70, 2d class -- 60, 3d class -- 55 and sub-standard -- 35 percent.

If the soybean seed of the 1st and 2d reproductions corresponds to the second category of varietal purity, then depending upon the class of the seed standard the increases for high quality are paid out in the amount of from 50 to 40 percent (sub-standard -- 25 percent). If the soybean seed is of the 3d reproduction and the 2d category, then the payment will be even lower -- depending upon the class of the seed standard, from 40 to 30 percent (sub-standard 15 percent) of the procurement price.

For the seed of deficit and promising varieties of soybeans, the total amount of the monetary increase for high quality, for the appropriate reproductions, categories of varietal purity and classes of the seed standard, is increased by 20 percent.

A new manifestation of the importance being attached to increasing the production and procurements of grain and oil-bearing seed is the decree adopted in 1980 by the CPSU Central Committee and the USSR Council of Ministers entitled "Improvements in Planning and the Economic Stimulation of the

Production and Procurements of Agricultural Products." The CPSU Central Committee and the USSR Council of Ministers considered it necessary to implement a system of measures for further improving planning and economic stimulation for agricultural development, aimed at increasing the production and procurements of agricultural products and strengthening the kolkhoz and sovkhoz economies. In carrying out this decree the USSR Ministry of Procurements, the USSR Ministry of Agriculture and the USSR State Price Committee, on 3 July 1981, approved an instruction concerning the payment during the 1981-1985 period to kolkhozes, sovkhozes and other agricultural enterprises and associations of a bonus in the amount of 50 percent of the procurement prices, for the sale to the state of agricultural products over and above the average level achieved during the 10th Five-Year Plan.

With regard to soybeans, its principal conditions are as follows. The average level for soybean sales to the state achieved during the 10th Five-Year Plan is defined as the total amount of soybeans sold to the state in credited weight over a period of 5 years, divided by five. All soybeans credited towards fulfillment of the state plan for sales during the 1976-1980 period are included in the overall volume of soybeans sold by farms to the state during the 10th Five-Year Plan. If the farms did not sell any soybeans during certain years owing to natural calamities or unfavorable weather conditions, then the computation of the average level achieved is carried out by dividing the overall amount of soybeans sold to the state by five.

The average sales level for the 10th Five-Year Plan is remaining stable for all years of the 11th Five-Year Plan, with a correction being permitted only in the case of a change taking place in land utilization by the farms. The basis for paying the 50 percent bonus is a document of collated data on sales and procurements over and above the average level achieved during the 10th Five-Year Plan. The collation document is composed based upon a computation-certificate for the average sales and procurement level achieved during the 10th Five-Year Plan. The 50 percent bonus for soybeans is paid to the farms commencing with the moment that the sales exceed the average level achieved during the 10th Five-Year Plan. This places soybeans in an advantageous position compared to many other grain crops, for which a bonus is paid out upon the completion of grain sales by the farms to the state, based upon a collation document and no later than 31 December.

For soybeans sold to the state during the 1981-1985 period, those farms which did not sell soybeans to the state during the 10th Five-Year Plan and which do not have a plan for selling this crop during the 11th Five-Year Plan will be paid according to the procurement prices with a 50 percent bonus commencing with the first ton. The total amount of 50 percent bonus payments is determined based upon the credited weight and the average payments according to the existing procurement prices. The total amount of payments for drying and cleaning and varietal bonuses for high quality seed and also the total amount of monetary deductions employed for a deviation in soybean quality from the basic conditions according to oil impurities and infestation by mites are not included in the computation of the 50 percent bonus.

Farms which cultivate soybeans for the very first time (according to lists approved by the councils of ministers of autonomous republics and the executive committees of oblast (kray) soviets of people's deputies) are paid a 50 percent bonus added on to the procurement price, taking into account the use of soybean procurement prices which have been raised by 20 percent.

Attaching great importance to the new system for stimulating the production and procurements of grain and oil-bearing seed, the USSR Ministry of Procurements carried out a check on the correct functioning of the 50 percent bonus payment. It was established that in those areas where the seed production farms devote proper attention to the cultivation of high quality soybean seed and ensure the fulfillment of the plans for selling such seed to the state, taking into account the contractual agreements, the farms realize fine profits and valuable waste products remain on the farms for use for feed purposes. The Priamur'ye Kolkhoz, the Pogranichnik, Partizan and Zarya Sovkhozes and other farms in Amur Oblast serve as clear examples of this.

At the Order of Lenin Priamur'ye Kolkhoz in Tambovskiy Rayon, a mechanized seed cleaning complex was built which makes it possible during one pass of the seed to raise its quality to the requirements for 1st class of the seed standard and to obtain high varietal bonuses for such seed. For example, for having sold 7,588 tons of soybean seed to the state (113 percent of the plan), the kolkhoz obtained 1.36 million rubles, including 570,000 rubles paid to it in the form of a monetary varietal bonus. This was more than one half of the total amount of payments due to all farms in the rayon which participated in the sale of high quality soybean seed.

An increase at the kolkhozes and sovkhozes in the production of high quality soybeans and in the procurements of soybeans for the state resources will aid in solving the USSR food program, adopted during the May (1982) Plenum of the CPSU Central Committee.

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